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Specification and Drawings, as originally filed, with Application for Patent Serial No:  
2,400,936, on August 30, 2002, by **BIOPHARMACOPAE DESIGN INTERNATIONAL  
INC.**, assignee of Benoit Cyr, for "Plant Extract Compositions and Their Use to Modulate  
Cellular Activity"

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September 25, 2003

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## **PLANT EXTRACT COMPOSITIONS AND THEIR USE TO MODULATE CELLULAR ACTIVITY**

### **FIELD OF INVENTION**

The invention pertains to the field of modulators of cellular activity, specifically within the field of inhibitors of extracellular proteases.

### **BACKGROUND OF THE INVENTION**

The cells of tissues are generally in contact with a network of large extracellular macromolecules that occupies the spaces in a tissue between the component cells and also occupies the space between adjacent tissues. This extracellular matrix functions as a scaffolding on which the cells and tissue are supported and is involved actively in regulating interaction of the cells that contact it. The principal macromolecules of the extracellular matrix include the collagens (the most abundant proteins in the body) and glycosaminoglycans (complex polysaccharides which are usually bonded also to protein and then termed proteoglycans). The macromolecules that comprise the extracellular matrix are produced typically by the cells in contact therewith, for example, epithelial cells in contact with a basement membrane and fibroblasts embedded in connective tissue.

The glycosaminoglycan (proteoglycan) molecules form a highly hydrated matrix (a gel) in which elastic or fibrous proteins (such as collagen fibers) are embedded. The aqueous nature of the gel permits diffusion of metabolically required substances between the cells of a tissue and between tissues. Additional proteins that may be found in extracellular matrix include elastin, fibronectin and laminin.

The term "connective tissue" refers to extracellular matrix plus specialised cells such as, for example, fibroblasts, chondrocytes, osteoblasts, macrophages and mast cells found therein. The term "interstitial tissue" is best reserved for an extracellular matrix that stabilizes a tissue internally, filling the gaps between the cells thereof. There are also specialized forms of

extracellular matrix (connective tissue) that have additional functional roles--cornea, cartilage and tendon, and when calcified, the bones and teeth.

A structural form of extracellular matrix is the basal lamina (basement membrane). Basal laminae are thin zones of extracellular matrix that are found under epithelium or surrounding, for example, muscle cells or the cells that electrically insulate nerve fibres. Generally speaking, basal laminae separate cell layers from underlying zones of connective tissue or serve as a boundary between two cell layers wherein a basal lamina can serve as a pathway for invading cells associated with pathologic processes, or for structural organisation associated with tissue repair (i.e. as a blueprint from which to regenerate original tissue architecture and morphology).

The regulated turnover of extracellular matrix macromolecules is critical to a variety of important biological processes. Localised degradation of matrix components is required when cells migrate through a basal lamina, as when white blood cells migrate across the vascular basal lamina into tissues in response to infection or injury, or when cancer cells migrate from their site of origin to distant organs via the bloodstream or lymphatic vessels, during metastasis. In normal tissues, the activity of extracellular proteases is tightly regulated and the breakdown/production of connective tissue is in dynamic equilibrium, such that there is a slow and continual turnover due to degradation and resynthesis in the extracellular matrix of adult animals.

In each of these cases, matrix components are degraded by extracellular proteolytic enzymes that are secreted locally by cells. These proteases belong to one of four general classes: many are metalloproteinases, which depend on bound  $\text{Ca}^{2+}$  or  $\text{Zn}^{2+}$  for activity, while the others are serine, aspartic and cysteine proteases, which have a highly reactive serine, aspartate or cysteine residue in their respective active site (Vincenti *et al.*, (1994) *Arthritis and Rheumatism*, 37: 1115-1126). Together, metalloproteinases, serine, aspartate and cysteine proteases cooperate to degrade matrix proteins such as collagen, laminin, and fibronectin.

Several mechanisms operate to ensure that the degradation of matrix components is tightly

controlled. First, many proteases are secreted as inactive precursors that can be activated locally. Second, the action of proteases is confined to specific areas by various secreted protease inhibitors, such as the tissue inhibitors of metalloproteases and the serine protease inhibitors known as serpins. These inhibitors are specific for particular proteases and bind tightly to the activated enzyme to block its activity. Third, many cells have receptors on their surface that bind proteases, thereby confining the enzyme to where it is needed.

Many pathogenic bacteria produce extracellular metalloproteases, of which many are zinc containing proteases that can be classified into two families, the thermolysin (neutral) proteases and the serravalysin (alkaline) proteases.

A number of patents and publications report the inhibition of one or more extracellular proteases by compounds extracted from plants. For example, Sun *et al.*, (1996) *Phytotherapy Res.*, 10: 194-197, reports the inhibition *in vitro* of stromelysin (MMP-3) and collagenase by betulinic acid extracted from *Doliocarpus verruculosus*. Sazuka *et al.*, (1997) *Biosci. Biotechnol. Biochem.*, 61: 1504-1506, reports the inhibition of gelatinases (MMP-2 and MMP-9) and metastasis by compounds isolated from green and black teas. Kumagai *et al.*, JP 08104628 A2, April 1, 1996 (CA 125: 67741) reports the use of flavones and anthocyanines isolated from *Scutellaria baicanlensis* roots to inhibit collagenase. Gervasi *et al.*, (1996) *Biochem. Biophys. Res. Comm.*, 228: 530-538, reports the regulation of MMP-2 by some plant lectins and other saccharides. Dubois *et al.*, (1998) *FEBS Lett.*, 427: 275-278, reports the increased secretion of deleterious gelatinase-B (MMP-9) by some plant lectins. Nagase *et al.*, (1998) *Planta Med.*, 64: 216-219, reports the weak inhibition of collagenase (MMPs) by delphinidin, a flavonoid isolated from *Solanum melongena*.

Other reports discuss the use of extracts to inhibit extracellular proteases. For example, Asano *et al.*, (1998) *Immunopharmacology*, 39: 117-126, reports the inhibition of TNF- $\alpha$  production using *Tripterygium wilfordii* Hook F. extracts. Maheu *et al.*, (1998) *Arthritis Rheumatol.*, 41: 81-91, reports the use of avocado/soy bean non-saponifiable extracts in the treatment of arthritis. Makimura *et al.*, (1993) *J. Periodontol.*, 64: 630-636, also reports the use of green tea extracts to inhibit collagenases *in vitro*. Obayashi *et al.*, (1998) *Nippon Keshonin Gijutsusha Kaishi*, 32: 272-279 (CA 130: 92196) reports the inhibition of



collagenase-I (MMP-1) from human fibroblast and neutrophil elastase by plant extract from Eucalyptus and Elder.

When a plant is stressed, several biochemical processes are activated and many new chemicals, in addition to those constitutively expressed, are synthesised as a response. These chemicals include enzymes, enzyme inhibitors (especially protease inhibitors), lectins, alkaloids, terpenes, oligosaccharides, and antibiotics. The biosynthesis of these defense chemicals and secondary metabolites is not yet fully understood. The most studied system is the production of protease inhibitors following pest attack or mechanical wounding. On the other hand, several inducible chemicals are the products of complex biochemical pathways which require several biosynthetic enzymes to be activated.

It has been shown that many chemicals can be used to "stress" plants and to artificially stimulate biosynthesis of several new and constitutive defense chemicals. Also, different types of stress can activate distinct metabolic defense pathways, thereby leading to production of a variety of chemicals. Although the various biosynthetic defense pathways share some similarities, these pathways are characteristic of specific plant species. Therefore, treating many plants with many types of stress can lead to a vast number of collections of diverse chemicals from plant origin.

In addition to pests, fungi, and other pathogenic attacks, stressors include drought, heat, water and mechanical wounding. Furthermore, many chemicals can act as stressors that activate gene expression; these include: hydrogen peroxide, ozone, sodium chloride, jasmonic acid and derivatives,  $\alpha$ -linoleic acid,  $\gamma$ -linoleic acid, salicylic acid, abscisic acid, volicitin, small oligopeptides, among others.

The use of abiotic stressors on plants has been the focus of intense studies in plant science. Artificial stresses have been used to stimulate the production of natural plant protease inhibitors for insect digestive proteases, in order to enhance crop protection against certain pests and herbivores. They have proven useful in combination with plants genetically modified to express other protease inhibitor genes. Finally, in the area of molecular farming, stresses have been used to stimulate gene expression in plants genetically modified to include

an inducible coding sequence for a protein of nutraceutical and/or medicinal interest (Ryan and Farmer, U.S. Patent No. 5,935,809).

Likewise, the use of gene activators or elicitors have been described to enhance the production of volatile chemicals in plant cell cultures. These elicitors have been demonstrated to induce the activity of several enzymes such as for example phenylalanine ammonia lyase, therefore leading to an increase in the production of plant volatile components.

No one has used stress to improve or modify plants human protease inhibitor content.

#### **BRIEF DESCRIPTION OF THE FIGURES AND TABLES**

Figure 1 presents an overview of one standard procedure that is followed in order to generate the extracts of the invention each of which is derived from the solid plant material. Solvent A, B and C generally represent separate classes of solvents, for example, aqueous, alcoholic and organic. They are generally applied in a polar to non-polar order. They can be applied in a non-polar to polar order, however, in each case the solid matter must be dried prior to contacting the solid matter with the subsequent solvent.

Figure 2 describes in further detail, one standard procedure that is followed in order to generate the extracts of the invention.

Figure 3 presents an overview of one example of a commercial procedure that could be followed to prepare extracts of the invention.

Table 1 reports the inhibition of human MMP-1 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 2 reports the inhibition of human MMP-2 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 3 reports the inhibition of human MMP-3 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 4 reports the inhibition of human MMP-9 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 5 reports the inhibition of human Cathepsin B by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 6 reports the inhibition of human Cathepsin D by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 7 reports the inhibition of human Cathepsin G by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 8 reports the inhibition of human Cathepsin L by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 9 reports the inhibition of human Cathepsin K by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 10 reports the inhibition of HLE by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 11 reports the inhibition of bacteria Clostripain by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 12 reports the inhibition of bacteria subtilisin by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

## SUMMARY OF THE INVENTION

In one aspect the invention provides an extract from a plant, which demonstrates the ability to modulate cellular activity, wherein the extract has been prepared by the steps of harvesting plant material, treating plant material with a solvent, separating the resulting extract from the solid material, testing an aliquot of the extract against a panel of extracellular proteases, and  
5 retaining the extract if it demonstrates the ability to modulate cellular activity,

In one aspect the invention provides a library of extracts from plants wherein each extract, demonstrates the ability to modulate cellular activity.

10 In another aspect the invention provides a library of plant extracts formed by a process comprising: contacting plant material with either an aqueous, ethanolic, or an organic solvent; isolating an extract from said plant material; analysing said extract for the ability to modulate cellular activity.; and collected together, so as to form a library of plant extracts wherein each extract inhibits one or more extracellular proteases.

15 In one aspect the invention provides an extract from a plant, which demonstrates the ability to modulate cellular activity, wherein said plant has been stressed prior to generating the extract.

20 In a further aspect the invention provides a library of extracts derived from plants wherein each extract demonstrates the ability to modulate cellular activity, and wherein said plants have been stressed prior to generating the extract.

In yet a further aspect provides an extracellular protease inhibitor derived from a plant  
25 comprising the steps of: contacting plant material with either an aqueous, ethanolic, or an organic solvent; isolating an extract from said plant material; analysing said extract for the ability to modulate cellular activity; further purifying a compound from said extract if said extract demonstrates the demonstrates the ability to modulate cellular activity,

30 In another aspect the invention provides a method for stressing the plant prior to forming a plant extract to generate extracts, which demonstrates the ability to modulate cellular activity

In another aspect the invention provides for the use of such extracts to modulate cell activity.

## DETAILED DESCRIPTION OF THE INVENTION

### 5 *Definitions*

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs.

10 "Extracellular protease" means enzymes which degrade proteins (proteases) secreted outside the cell. Included MMPs, cathepsins, elastase, plasmin, TPA, uPA, kallikrein, ADAMS family members, neprilysin, gingipain, clostripain, thermolysin, serralysin, and other bacterial and viral enzymes.

15 "Extract of the invention," means an a composition prepared by contacting a solvent with plant material, produced following the procedures of the invention, which demonstrates inhibitory activity against one or more extracellular proteases. In one embodiment an extract of the invention demonstrates inhibitory activity against two or more extracellular proteases. In one embodiment an extract of the invention demonstrates inhibitory activity against three  
20 or more extracellular proteases. In one embodiment, an extract of the invention demonstrates inhibitory activity against four or more extracellular proteases. The solvent may be evaporated leaving a solid embodiment of the extract. In one embodiment, the inhibitory activity is greater than about 20% when measured according to one of the assays as described herein. In one embodiment a panel of extracellular proteases can be used to test the  
25 inhibitory activity of the extract.

"Panel of Extracellular Proteases" means the array of distinct extracellular proteases that are used to perform routine assays to monitor the presence or absence of inhibitory activity throughout the extraction process of the invention. In one embodiment, inhibitory activity  
30 against one or more extracellular proteases is monitored; in one embodiment, inhibitory activity against two or more extracellular proteases is monitored; in one embodiment inhibitory activity against three or more extracellular proteases is monitored; in one

embodiment inhibitory activity against four or more extracellular proteases is monitored; in one embodiment inhibitory activity against five or more extracellular proteases is monitored.

One skilled in the art would appreciate that as high throughput screening techniques develop, one could routinely assay the fractions of the extracts with as many extracellular proteases as the technology permits. In general, the more enzymes that can be routinely tested the more information that can be generated during this process that will be useful for defining extracts useful to inhibit extracellular proteases.

"Potential plants" includes all species of the Kingdom Plantae, including plants under the Division Chlorophyta, Division Rhodophora, Division Paeophyta, Division Bryophyta and Division Tracheophyta; Subdivision Lycopsidea, Subdivision Sphenopsida, Subdivision Pteropsida and Subdivision Spermopsida; Class Gymnospermae, Class Angiospermae, Subclass Dicotyledonidae and Subclass Monocotyledonidae. In general terms, all plants, herbs, and lower plants such as fungi and algae. Potential plants are those plants that can be subjected to the methodology of the invention in order to generate an extract which can then be tested against a panel of extracellular proteases. Those plants which yield an extract demonstrating inhibitory activity against an extracellular protease are considered to be plants and extracts comprising the subject matter of the invention.

"Potential Pre-Extract" means an extract which has not yet been determined to possess inhibitory activity against one or more extracellular proteases.

"Plant material" means any part of a plant taken individually or in group, could include but not restricted to leafs, flowers, roots, seeds, stems, and other part of a plant, wherein a plant may be terrestrial, aquatic or other.

"Protease inhibitor" as used herein, refers to any compound that attenuates the proteolytic activity of proteases. "Protease inhibitor" may or may not be proteinaceous.

"Stressor" as used herein, refers to any physical stress, chemical compound, or a biological agent used to elicit production of extracellular protease inhibitors as a result of activation of a defence response in a plant. Elicitors and inducers are also considered to be stressors. Any

material of a plant may be contacted with a stressor, elicitor, or inducer, which is a chemical compound, for example organic and inorganic acids, fatty acids, glycerides, phospholipids, glycolipids, organic solvents, amino acids, and peptides, monosaccharides, oligosaccharides, polysaccharides and lipopolysaccharides, phenolics, alkaloids, terpenes and terpenoids, antibiotics, detergents, polyamines, peroxides, ionophores, etc., or subjected to a physical treatment, such as ultraviolet radiation, low and high temperature stress, osmotic stress induced by salt or sugars, nutritional stress defined as depriving the plant of essential nutrients (N, P, or K), in order to induce or elicit increased production of one or more chemicals. Such chemical compound or physical treatment may be applied continuously or intermittently to the plant or plant part. In one embodiment, such treatment may be accomplished by contacting the plant material with a solution containing the elicitor or by irradiating the plant material or exposing the plant material to other environmental stresses such as temperature stresses.

The term "substantially purified" or "substantially pure" or "isolated," when used in reference to a molecule having protease inhibitor activity, means that the molecule is in a form that is relatively free of proteins, nucleic acids, lipids, carbohydrates or other materials with which it is naturally associated in a plant. As disclosed herein, a plant extract of the invention is considered to be substantially purified. In addition, the molecules having protease inhibitor activity can be further purified using routine and well known methods as provided herein. As such, a substantially pure protease inhibitor of the invention can constitute at least about one or a few percent of a sample, for example, at least about five percent of a sample, generally at least about twenty percent of a sample, and can be further purified to constitute at least about fifty percent of a sample, generally at least about eighty percent of a sample, and particularly about ninety percent or ninety-five percent or more of a sample. A determination that a protease inhibitor of the invention is substantially pure can be made using methods as disclosed herein or otherwise known in the art, for example, by performing electrophoresis and identifying the particular molecule as a relatively discrete band,

Other chemistry terms herein are used according to conventional usage in the art, as exemplified by The McGraw-Hill Dictionary of Chemical Terms (ed. Parker, S., 1985), McGraw-Hill, San Francisco, incorporated herein by reference).

The subject invention involves extracts from the tissues of plant species which provide inhibitory activity against extracellular proteases. In one embodiment, the present invention relates to the use of plants to produce extracts or semi-purified/purified compounds, compositions and formulations demonstrating an inhibitory activity against one or more proteases involved in the proteolytic degradation of human extracellular matrix. Such extracts, compounds, compositions and formulations derived from plant sources, optionally from water, ethanol or organic extracts prepared from said plant tissues, and fractions separable from said extracts by chromatography or centrifugal ultra-filtration or other means. In one aspect, these extracts with inhibitory activity can be used during protein purification to minimize the degradation due to extracellular proteases.

With reference to Figure 1, the process for producing an extract of the invention begins with choosing a plant species. Then a pre-harvest treatment is selected, wherein either treatment with water, or water in addition to any combination of a stress, wherein the stress can be applied separately from the water (if the stress is drought, then the water would not be provided for the period in which the plant is to be stressed); followed by choosing whether the treated plant will be treated for storage and stored prior to contacting plant material with the first solvent. The plant material is treated with the first solvent and then the liquid is separated from the solid material (solid S2), wherein the liquid becomes Fraction F1 or Pre-Extract A. The solid S2 is treated with the second solvent and then the liquid is separated from the solid material (Solid S3), wherein the liquid becomes Fraction F2 or Pre-Extract B. The solid S3 is treated with the third solvent and then the liquid is separated from the solid material (Solid S4).

#### *Plant Material*

In one embodiment, plants that may be employed in the invention comprise: *Abelmoschus esculentus*; *Abies balsamea*; *Abies lasiocarpa*; *Achillea millefolium*; *Achillea tomentosa*; *Aconitum napellus*; *Aconitum* spp.; *Acorus calamus*; *Actaea racemosa*; *Actinidia arguta*; *Actinidia chinensis*; *Adiantum pedatum*; *Adiantum tenerum*; *Aesculus hippocastanum*; *Aframomum melegueta*; *Agaricus bisporus*; *Agastache foeniculum*; *Ageratum conyzoides*; *Agrimonia eupatoria*; *Agropyron cristatum*; *Agropyron repens*; *Agrostis alba*; *Agrostis*



- stolonifera; *Alcea rosea*; *Alchemilla mollis*; *Alkanna tinctoria*; *Allium ampeloprasum*; *Allium cepa*; *Allium fistulosum*; *Allium grande*; *Allium porrum*; *Allium sativum*; *Allium schoenoprasum*; *Allium tuberosum*; *Allium victorialis*; *Aloe vera*; *Alpinia officinarum*; *Althaea officinalis*; *Amaranthus caudatus*; *Amaranthus retroflexus*; *Amaranthus tricolor*;
- 5 *Ambrosia artemisiifolia*; *Amelanchier alnifolia*; *Amelanchier canadensis*; *Amelanchier sanguinea*; *Amelanchier sanguinea* x *A. laevis*; *Amsonia tabernaemontana*; *Ananas comosus*; *Anaphalis margaritacea*; *Anethum graveolens*; *Angelica archangelica*; *Angelica dahurica*; *Angelica sinensis*; *Anthemis tinctoria*; *Anthoxanthum odoratum*; *Anthriscus cerefolium*; *Anthurium guildingii*; *Apium graveolens*; *Apocynum cannabinum*; *Arachis*
- 10 *hypogaea*; *Aralia cordata*; *Aralia nudicaulis*; *Arctium lappa*; *Arctium minus*; *Arctostaphylos uva-ursi*; *Armoracia rusticana*; *Aronia melanocarpa*; *Aronia* x *prunifolia*; *Arrhenatherum elatius*; *Artemisia abrotanum*; *Artemisia absinthium*; *Artemisia dracunculus*; *Artemisia ludoviciana*; *Artemisia vulgaris*; *Asarum europaeum*; *Asclepias incarnata*; *Asclepias tuberosa*; *Asparagus officinalis*; *Aster* spp.; *Astilbe* x *arendsii*;
- 15 *Astilboides tabularis*; *Athyrium asperum*; *Atriplex hortensis*; *Atropa belladonna*; *Avena sativa*; *Averrhoa carambola*; *Baptisia tinctoria*; *Beckmannia eruciformis*; *Begonia convolvulacea*; *Begonia eminii*; *Begonia glabra*; *Begonia mannii*; *Begonia polygonoides*; *Bellis perennis*; *Berberis vulgaris*; *Beta vulgaris*; *Betula alleghaniensis*; *Betula glandulosa*; *Boesenbergia rotunda*; *Boletus edulis*; *Borago officinalis*; *Brassica cepticepa*; *Brassica*
- 20 *juncea*; *Brassica napus*; *Brassica nigra*; *Brassica oleracea*; *Brassica rapa*; *Bromus inermis*; *Buddleja davidii*; *Bupleurum falcatum*; *Butomus umbellatus*; *Caladium* spp.; *Calamagrostis arundiflora*; *Calamintha nepeta*; *Calendula officinalis*; *Camellia sinensis*; *Campanula rapunculus*; *Canna indica*; *Cantharellus cibarius*; *Capsella bursa-pastoris*; *Capsicum annuum*; *Capsicum frutescens*; *Carex morrowii*; *Carica papaya*; *Carthamus*
- 25 *tinctorius*; *Carum carvi*; *Carya cordiformis*; *Castanea* spp.; *Centaurea solstitialis*; *Cerastium tomentosum*; *Chaerophyllum bulbosum*; *Chamaemelum nobile*; *Chelidonium majus*; *Chenopodium album*; *Chenopodium bonus-henricus*; *Chenopodium quinoa*; *Chrysanthemum coronarium*; *Cicer arietinum*; *Cichorium endivia* subsp. *endivia*; *Cichorium intybus*; *Cinnamomum verum*; *Cirsium arvense*; *Cissus discolor*; *Citrullus*
- 30 *colocynthis*; *Citrullus lanatus*; *Citrus limettoides*; *Citrus limon*; *Citrus reticulata*; *Citrus sinensis*; *Citrus* x *paradisi*; *Clematis armandii*; *Clematis chiisanensis*; *Coccoloba caracasana*; *Cocos nucifera*; *Coix lacryma-jobi*; *Colocasia* spp.; *Convallaria majalis*;

- Conyza canadensis*; *Corchorus olitorius*; *Coriandrum sativum*; *Cornus canadensis*; *Cornus mas*; *Cosmos sulphureus*; *Cotinus coggygia*; *Crataegus sanguinea*; *Crataegus* spp.;  
*Crataegus submollis*; *Crithmum maritimum*; *Cryptotaenia canadensis*; *Cucumis anguria*;  
*Cucumis melo*; *Cucumis metuliferus*; *Cucumis sativus*; *Cucurbita maxima*; *Cucurbita*  
5 *moschata*; *Cucurbita pepo*; *Cullen corylifolium*; *Cuminum cyminum*; *Curcuma longa*;  
*Curcuma zedoaria*; *Cydonia oblonga*; *Cymbopogon citratus*; *Cymbopogon martinii*;  
*Cynara cardunculus* subsp. *cardunculus*; *Cyperus esculentus*; *Dactylis glomerata*; *Datisca cannabina*;  
*Datura metel*; *Datura stramonium*; *Daucus carota*; *Digitalis purpurea*;  
*Dimocarpus longan*; *Dioscorea batatas*; *Diospyros kaki*; *Dipsacus sativus*; *Dirca palustris*;  
10 *Dolichos lablab*; *Dryopteris filix-mas*; *Echinacea purpurea*; *Echinochloa frumentacea*;  
*Eleusine coracana*; *Equisetum hyemale*; *Erigeron speciosus*; *Eriobotrya japonica*; *Eruca vesicaria*;  
*Erysimum perofskianum*; *Eschscholzia californica*; *Fagopyrum esculentum*;  
*Fagopyrum tataricum*; *Festuca rubra*; *Filipendula rubra*; *Filipendula ulmaria*; *Filipendula vulgaris*;  
*Foeniculum vulgare*; *Forsythia x intermedia*; *Fortunella* spp.; *Fragaria x ananassa*;  
15 *Frangula alnus*; *Fucus vesiculosus*; *Fumaria officinalis*; *Galinsoga quadriradiata*; *Galium odoratum*;  
*Gaultheria hispidula*; *Gaultheria procumbens*; *Genista multibracteata*; *Gentiana lutea*;  
*Gentiana macrophylla*; *Geum rivale*; *Ginkgo biloba*; *Glechoma hederacea*; *Glyceria maxima*;  
*Glycine max*; *Glycyrrhiza glabra*; *Gossypium herbaceum*; *Guizotia abyssinica*;  
*Hamamelis virginiana*; *Hedeoma pulegioides*; *Hedychium* spp.; *Helianthus annuus*;  
20 *Helianthus strumosus*; *Helianthus tuberosus*; *Helichrysum angustifolium*; *Helichrysum thianschanicum*;  
*Heliotropium arborescens*; *Helleborus niger*; *Herba schizonepetae*;  
*Hibiscus cannabinus*; *Hordeum hexastichon*; *Hordeum vulgare*; *Hordeum vulgare* subsp. *vulgare*;  
*Houttuynia cordata*; *Humulus lupulus*; *Hydrastis canadensis*; *Hylotelephium* spp.;  
*Hymenoxys hoopesii*; *Hyoscyamus niger*; *Hypericum henryi*; *Hypericum perforatum*;  
25 *Hypericum* spp.; *Hypomyces lactifluorum*; *Hyssopus officinalis*; *Iberis amara*; *Iberis sempervirens*;  
*Inula helenium*; *Ipomoea batatas*; *Iris versicolor*; *Isatis tinctoria*; *Jeffersonia diphylla*;  
*Juglans nigra*; *Juniperus communis*; *Kochia scoparia*; *Koeleria glauca*;  
*Kolkwitzia amabilis*; *Krameria lappacea*; *Lactuca sativa*; *Lactuca serriola*; *Laportea canadensis*;  
*Laserpitium latifolium*; *Lathyrus sativus*; *Lathyrus sylvestris*; *Laurus nobilis*;  
30 *Lavandula angustifolia*; *Lavandula latifolia*; *Ledum groenlandicum*; *Lens culinaris* subsp. *culinaris*;  
*Lentinus edodes*; *Leonurus cardiaca*; *Lepidium sativum*; *Leucanthemum vulgare*;  
*Levisticum officinale*; *Ligularia dentata*; *Ligustrum vulgare*; *Linaria vulgaris*; *Lindera*

- benzoin; *Linum usitatissimum*; *Litchi chinensis*; *Lolium multiflorum*; *Lolium perenne*;  
*Lonicera ramosissima*; *Lonicera syringantha*; *Lotus corniculatus*; *Lotus tetragonolobus*;  
*Lunaria annua*; *Lupinus polyphyllus*; *Luzula sylvatica*; *Lychnis chalcedonica*;  
*Lycopersicon esculentum*; *Lycopersicon pimpinellifolium*; *Lysimachia clethroides*;  
5 *Lythrum salicaria*; *Madia sativa*; *Magnolia stellata*; *Malus hupehensis*; *Malus prunifolia*;  
*Malus* spp.; *Malva moschata*; *Malva sylvestris*; *Mangifera indica*; *Manihot esculenta*;  
*Marrubium vulgare*; *Matricaria recutita*; *Matricaria* spp.; *Medicago sativa*; *Melaleuca*  
*alternifolia*; *Melilotus albus*; *Melilotus officinalis*; *Melissa officinalis*; *Mentha arvensis*;  
*Mentha pulegium*; *Mentha spicata*; *Mentha suaveolens*; *Mentha x piperita*; *Menyanthes*  
10 *trifoliata*; *Microlepis platyphylla*; *Miscanthus sacchariflorus*; *Miscanthus sinensis*;  
*Momordica charantia*; *Monarda didyma*; *Monarda fistulosa*; *Monarda* spp.; *Musa x*  
*paradisiaca*; *Myrica pensylvanica*; *Nasturtium officinale*; *Nepeta cataria*; *Nicotiana rustica*;  
*Nicotiana tabacum*; *Nigella sativa*; *Ocimum Basilicum*; *Oenothera biennis*; *Onobrychis*  
*viciifolia*; *Ophiopogon japonicus*; *Opuntia* spp.; *Origanum majorana*; *Origanum vulgare*;  
15 *Oryza sativa*; *Oxalis deppei*; *Oxyria digyna*; *Paeonia rubra*; *Paeonia* spp.; *Panax*  
*quinquefolius*; *Panicum miliaceum*; *Passiflora caerulea*; *Passiflora* spp.; *Pastinaca sativa*;  
*Pennisetum alopecuroides*; *Perilla frutescens*; *Persea americana*; *Petasites japonicus*;  
*Petroselinum crispum*; *Peucedanum cervaria*; *Peucedanum oreaselinum*; *Pfaffia paniculata*;  
*Phacelia tanacetifolia*; *Phalaris arundinacea*; *Phalaris canariensis*; *Phaseolus acutifolius*;  
20 *Phaseolus coccineus*; *Phaseolus vulgaris*; *Philadelphus coronarius*; *Phleum pratense*; *Phlox*  
*paniculata*; *Phoenix dactylifera*; *Physalis grisea*; *Physalis philadelphica*; *Physalis* spp.;  
*Physostegia virginiana*; *Phytolacca americana*; *Pimpinella anisum*; *Pisum sativum*;  
*Plantago coronopus*; *Plantago major*; *Plectranthus fruticosus*; *Plectranthus* spp.; *Pleurotus*  
spp.; *Plumbago zeylanica*; *Poa compressa*; *Poa pratensis*; *Podophyllum peltatum*;  
25 *Polygonatum odoratum*; *Polygonum aviculare*; *Polygonum chinense*; *Polygonum*  
*pensylvanicum*; *Polygonum persicaria*; *Pongamia pinnata*; *Pontederia cordata*; *Populus*  
*incrassata*; *Populus tremula*; *Populus x petrowskyana*; *Portulaca oleracea*; *Potentilla*  
*anserina*; *Poterium sanguisorba*; *Primula veris*; *Prunella vulgaris*; *Prunus armeniaca*;  
*Prunus cerasus*; *Prunus persica*; *Prunus* spp.; *Prunus tomentosa*; *Psathyrostachys juncea*;  
30 *Psidium guajava*; *Psidium* spp.; *Pteridium aquilinum*; *Pulmonaria officinalis*; *Pulmonaria*  
*saccharata*; *Punica granatum*; *Pyrus communis*; *Pyrus pyrifolia*; *Raphanus raphanistrum*;  
*Raphanus sativus*; *Rehmannia glutinosa*; *Reseda luteola*; *Reseda odorata*; *Rheum*

- officinale; *Rheum palmatum*; *Rheum x hybridum*; *Rhus aromatica*; *Rhus trilobata*; *Ribes grossularia*; *Ribes nigrum*; *Ribes rubrum*; *Ribes sylvestre*; *Ribes uva-crispa*; *Ribes x nidigrolaria*; *Ricinus communis*; *Rosa rugosa*; *Rosmarinus officinalis*; *Rubus allegheniensis*; *Rubus canadensis*; *Rubus idaeus*; *Rubus occidentalis*; *Rubus thibetanus*;
- 5 *Rumex acetosa*; *Rumex acetosella*; *Rumex crispus*; *Rumex patientia*; *Rumex scutatus*; *Ruta graveolens*; *Saccharum officinarum*; *Salix purpurea*; *Salvia elegans*; *Salvia officinalis*; *Salvia sclarea*; *Salvia sylvestris*; *Sambucus canadensis*; *Sambucus ebulus*; *Sambucus nigra*; *Sanguisorba minor*; *Sanguisorba officinalis*; *Santolina chamaecyparissus*; *Saponaria officinalis*; *Satureja hortensis*; *Satureja montana*; *Satureja repandra*; *Scolymus*
- 10 *hispanicus*; *Scorzonera hispanica*; *Scrophularia nodosa*; *Scutellaria lateriflora*; *Secale cereale*; *Sechium edule*; *Senecio vulgaris*; *Serenoa repens*; *Serratula tinctoria*; *Sesamum indicum*; *Setaria italica*; *Sidalcea* spp.; *Silene vulgaris*; *Silybum marianum*; *Sinapis alba* subsp. *alba*; *Sium sisarum*; *Solanum dulcamara*; *Solanum melongena*; *Solanum scabrum*; *Solanum tuberosum*; *Solidago canadensis*; *Solidago* spp.; *Solidago virgaurea*; *Solidago x*
- 15 *hybrida*; *Sonchus oleraceus*; *Sorghum bicolor*; *Sorghum x drummondii*; *Spinacia oleracea*; *Stachys affinis*; *Stachys byzantina*; *Stachys macrantha*; *Stellaria graminea*; *Stellaria media*; *Stipa capillata*; *Symphytum officinale*; *Tamarindus indica*; *Tanacetum balsamita*; *Tanacetum balsamita* subsp. *balsamita*; *Tanacetum cinerariifolium*; *Tanacetum parthenium*; *Tanacetum vulgare*; *Taraxacum officinale*; *Tetradenia riparia*; *Teucrium chamaedrys*;
- 20 *Thalictrum aquilegiifolium*; *Thlaspi arvense*; *Thuja occidentalis*; *Thymus fragrantissimus*; *Thymus herba-barona*; *Thymus praecox* subsp. *arcticus*; *Thymus pseudolanuginosus*; *Thymus serpyllum*; *Thymus vulgaris*; *Thymus x citriodorus*; *Tiarella cordifolia*; *Tiarella* spp.; *Tragopogon porrifolius*; *Tragopogon* spp.; *Trichosanthes kirilowii*; *Trifolium hybridum*; *Trifolium incarnatum*; *Trifolium pannonicum*; *Trifolium pratense*; *Trifolium*
- 25 *repens*; *Trigonella foenum-graecum*; *Triticum aestivum*; *Triticum aestivum* subsp. *spelta*; *Triticum turgidum*; *Trollius x cultorum*; *Tropaeolum majus*; *Tsuga canadensis*; *Tsuga diversifolia*; *Tsuga mertensiana*; *Tussilago farfara*; *Typha latifolia*; *Ulmus americana*; *Urtica dioica*; *Uvularia perfoliata*; *Vaccinium angustifolium*; *Vaccinium corymbosum*; *Vaccinium macrocarpon*; *Valeriana officinalis*; *Valerianella locusta*; *Veratrum viride*;
- 30 *Verbascum thapsus*; *Verbena officinalis*; *Veronica officinalis*; *Viburnum opulus*; *Vicia faba*; *Vicia sativa*; *Vicia villosa*; *Vigna angularis*; *Vigna mungo*; *Vigna unguiculata*; *Vinca minor*; *Vitis* spp.; *Weigela coraeensis*; *Weigela hortensis*; *Withania somnifera*; *x*

Triticosecalé spp.; *Xanthium sibiricum*; *Xanthium strumarium*; *Yucca filamentosa*; *Zea mays*; *Zingiber officinale*; *Achillea ptarmica*; *Ajuga reptans*; *Aster* spp; *Astilbe chinensis*; *Bergenia x schmidtii*; *Brassica chinensis*; *Butomus umbellatus*; *Buxus microphylla*; *Carpinus caroliniana*; *Centaurea dealbata*; *Chaenomeles x superba*; *Clematis alpina*; *Coreopsis verticillata*; *Cornus alba*; *Cornus sericea*; *Corylus maxima*; *Crambe cordifolia*; *Cyperus alternifolius*; *Dahlia* spp.; *Euphorbia amygdaloides*; *Fuchsia* spp.; *Fuchsia magellanica*; *Galium aparine*; *Geranium sanguineum*; *Geranium phaeum*; *Geranium pratense*; *Geranium sanguineum*; *Geranium x cantabrigiense*; *Glaux Maritima*; *Hamamelis mollis*; *Hedychium coronarium*; *Helenium* spp.; *Herba Schizonepetae*; *Hosta sieboldiana*; *Hydrangea quercifolia*; *Ipomoea aquatica*; *Lamiastrum galeobdolon*; *Magnolia x loebneri*; *Malva verticillata*; *Matteuccia pensylvanica*; *Microbiata decussata*; *Montia perfoliata*; *Ocimum tenuiflorum*; *Oenothera fruticosa* subsp *fruticosa*; *Onoclea sensibilis*; *paeonia suffruticosa*; *Penstemon digitalis*; *Petasites japonicus*; *Physalis alkekengi*; *Pinus cembra*; *Pinus mugo*; *Potentilla fruticosa*; *Rhododendron* spp.; *ribes americanum*; *Rodgersia* spp.; *Rodgersia podophylla*; *Rubus arcticus*; *Rubus phoenicolasius*; *Rubus pubescens*; *Rudbeckia maxima*; *Sempervivum tectorum*; *Soleirolia soleirolii*; *Solidago caesia*; *Staphylea trifolia*; *Stephanandra incisa*; *Stewartia pseudocamellia*; *Strelitzia reginae*; *Symphoricarpos orbiculatus*; *Symphoricarpos albus*; *Taxus x media*; *Vernonia gigantea*; *Veronica austriaca* ssp *teucrium*; *Veronica beccabunga*; *Viburnum plicatum*.

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It is further contemplated by this invention that any plant may be employed in the method as a potential plant. For example, plants belonging to the following classifications may optionally be employed in order to prepare an extract of the invention when such extracts are

demonstrated to possess inhibitory activities against extracellular proteases: Superdivision  
 25 Spermatophyta -- Seed plants Division Coniferophyta -- Conifers Class Pinopsida Order  
 Pinales Family Araucariaceae -- Araucaria family Family Cephalotaxaceae -- Plum Yew  
 family Family Cupressaceae -- Cypress family Family Pinaceae -- Pine family Family  
 Podocarpaceae -- Podocarpus family Family Taxodiaceae -- Redwood family Order Taxales  
 Family Taxaceae -- Yew family Division Cycadophyta -- Cycads Class Cycadopsida Order  
 30 Cycadales Family Cycadaceae -- Cycad family Family Zamiaceae -- Sago-palm family  
 Division Ginkgophyta -- Ginkgo Class Ginkgoopsida Order Ginkgoales Family Ginkgoaceae  
 -- Ginkgo family Division Gnetophyta -- Mormon tea and other gnetophytes Class

- Gnetopsida Order Ephedrales Family Ephedraceae -- Mormon-tea family Order Gnetales  
 Family Gnetaceae -- Gnetum family Division Magnoliophyta -- Flowering plants Class  
 Liliopsida -- Monocotyledons Subclass Alismatidae Order Alismatales Family Alismataceae --  
 - Water-plantain family Family Butomaceae -- Flowering Rush family Family  
 5 Limnocharitaceae -- Water-poppy family Order Hydrocharitales Family Hydrocharitaceae --  
 Tape-grass family Order Najadales Family Aponogetonaceae -- Cape-pondweed family  
 Family Cymodoceaceae -- Manatee-grass family Family Juncaginaceae -- Arrow-grass family  
 Family Najadaceae -- Water-nymph family Family Posidoniaceae -- Posidonia family Family  
 Potamogetonaceae -- Pondweed family Family Ruppiaceae -- Ditch-grass family Family  
 10 Scheuchzeriaceae -- Scheuchzeria family Family Zannichelliaceae -- Horned pondweed  
 family Family Zosteraceae -- Eel-grass family Subclass Arecidae Order Arales Family  
 Acoraceae -- Calamus family Family Araceae -- Arum family Family Lemnaceae --  
 Duckweed family Order Arecales Family Areaceae -- Palm family Order Cyclanthales  
 Family Cyclanthaceae -- Panama Hat family Order Pandanales Family Pandanaceae -- Screw-  
 15 pine family Subclass Commelinidae Order Commelinales Family Commelinaceae --  
 Spiderwort family Family Mayacaceae -- Mayaca family Family Xyridaceae -- Yellow-eyed  
 Grass family Order Cyperales Family Cyperaceae -- Sedge family Family Poaceae -- Grass  
 family Order Eriocaulales Family Eriocaulaceae -- Pipewort family Order Juncals Family  
 Juncaceae -- Rush family Order Restionales Family Joinvilleaceae -- Joinvillea family Order  
 20 Typhales Family Sparganiaceae -- Bur-reed family Family Typhaceae -- Cat-tail family  
 Subclass Liliidae Order Liliales Family Agavaceae -- Century-plant family Family Aloeaceae  
 -- Aloe family Family Dioscoreaceae -- Yam family Family Haemodoraceae -- Bloodwort  
 family Family Hanguanaceae -- Hanguana family Family Iridaceae -- Iris family Family  
 Liliaceae -- Lily family Family Philydraceae -- Philydraceae family Family Pontederiaceae --  
 25 Water-Hyacinth family Family Smilacaceae -- Catbrier family Family Stemonaceae --  
 Stemona family Family Taccaceae -- Tacca family Order Orchidales Family Burmanniaceae --  
 - Burmannia family Family Orchidaceae -- Orchid family Subclass Zingiberidae Order  
 Bromeliales Family Bromeliaceae -- Bromeliad family Order Zingiberales Family Cannaceae  
 -- Canna family Family Costaceae -- Costus family Family Heliconiaceae -- Heliconia family  
 30 Family Marantaceae -- Prayer-Plant family Family Musaceae -- Banana family Family  
 Zingiberaceae -- Ginger family Class Magnoliopsida -- Dicotyledons Subclass Asteridae  
 Order Asterales Family Asteraceae -- Aster family Order Callitrichales Family

- Callitrichaceae -- Water-starwort family Family Hippuridaceae -- Mare's-tail family Order  
 Calycerales Family Calyceraceae -- Calycera family Order Campanulales Family  
 Campanulaceae -- Bellflower family Family Goodeniaceae -- Goodenia family Family  
 Spheocleaceae -- Spheoclea family Order Dipsacales Family Adoxaceae -- Moschatel family  
 5 Family Caprifoliaceae -- Honeysuckle family Family Dipsacaceae -- Teasel family Family  
 Valerianaceae -- Valerian family Order Gentianales Family Apocynaceae -- Dogbane family  
 Family Asclepiadaceae -- Milkweed family Family Gentianaceae -- Gentian family Family  
 Loganiaceae -- Logania family Order Lamiales Family Boraginaceae -- Borage family Family  
 Lamiaceae -- Mint family Family Lennoaceae -- Lennoa family Family Verbenaceae --  
 10 Verbena family Order Plantaginales Family Plantaginaceae -- Plantain family Order Rubiales  
 Family Rubiaceae -- Madder family Order Scrophulariales Family Acanthaceae -- Acanthus  
 family Family Bignoniaceae -- Trumpet-creeper family Family Buddlejaceae -- Butterfly-  
 bush family Family Gesneriaceae -- Gesneriad family Family Lentibulariaceae -- Bladderwort  
 family Family Myoporaceae -- Myoporum family Family Oleaceae -- Olive family Family  
 15 Orobanchaceae -- Broom-rape family Family Pedaliaceae -- Sesame family Family  
 Scrophulariaceae -- Figwort family Order Solanales Family Convolvulaceae -- Morning-glory  
 family Family Cuscutaceae -- Dodder family Family Fouquieriaceae -- Ocotillo family  
 Family Hydrophyllaceae -- Waterleaf family Family Menyanthaceae -- Buckbean family  
 Family Polemoniaceae -- Phlox family Family Solanaceae -- Potato family Subclass  
 20 Caryophyllidae Order Caryophyllales Family Achatocarpaceae -- Achatocarpus family  
 Family Aizoaceae -- Fig-marigold family Family Amaranthaceae -- Amaranth family Family  
 Basellaceae -- Basella family Family Cactaceae -- Cactus family Family Caryophyllaceae --  
 Pink family Family Chenopodiaceae -- Goosefoot family Family Molluginaceae -- Carpet-  
 weed family Family Nyctaginaceae -- Four o'clock family Family Phytolaccaceae --  
 25 Pokeweed family Family Portulacaceae -- Purslane family Order Plumbaginales Family  
 Plumbaginaceae -- Leadwort family Order Polygonales Family Polygonaceae -- Buckwheat  
 family Subclass Dilleniidae Order Batales Family Bataceae -- Saltwort family Order  
 Capparales Family Brassicaceae -- Mustard family Family Capparaceae -- Caper family  
 Family Moringaceae -- Horse-radish tree family Family Resedaceae -- Mignonette family  
 0 Order Diapensiales Family Diapensiaceae -- Diapensia family Order Dilleniales Family  
 Dilleniaceae -- Dillenia family Family Paeoniaceae -- Peony family Order Ebenales Family  
 Ebenaceae -- Ebony family Family Sapotaceae -- Sapodilla family Family Styracaceae --

- Storax family Family Symplocaceae -- Sweetleaf family Order Ericales Family Clethraceae --  
 Clethra family Family Cyrillaceae -- Cyrilla family Family Empetraceae -- Crowberry family  
 Family Epacridaceae -- Epacris family Family Ericaceae -- Heath family Family  
 Monotropaceae -- Indian Pipe family Family Pyrolaceae -- Shinleaf family Order  
 5 Lecythidales Family Lecythidaceae -- Brazil-nut family Order Malvales Family Bombacaceae  
 -- Kapok-tree family Family Elaeocarpaceae -- Elaeocarpus family Family Malvaceae --  
 Mallow family Family Sterculiaceae -- Cacao family Family Tiliaceae -- Linden family Order  
 Nepenthales Family Droseraceae -- Sundew family Family Nepenthaceae -- East Indian  
 Pitcher-plant family Family Sarraceniaceae -- Pitcher-plant family Order Primulales Family  
 10 Myrsinaceae -- Myrsine family Family Primulaceae -- Primrose family Family  
 Theophrastaceae -- Theophrasta family Order Salicales Family Salicaceae -- Willow family  
 Order Theales Family Actinidiaceae -- Chinese Gooseberry family Family Caryocaraceae --  
 Souari family Family Clusiaceae -- Mangosteen family Family Dipterocarpaceae -- Meranti  
 family Family Elatinaceae -- Waterwort family Family Marcgraviaceae -- Shingle Plant  
 15 family Family Ochnaceae -- Ochna family Family Theaceae -- Tea family Order Violales  
 Family Begoniaceae -- Begonia family Family Bixaceae -- Lipstick-tree family Family  
 Caricaceae -- Papaya family Family Cistaceae -- Rock-rose family Family Cucurbitaceae --  
 Cucumber family Family Datisceae -- Datisca family Family Flacourtiaceae -- Flacourtia  
 family Family Frankeniaceae -- Frankenia family Family Loasaceae -- Loasa family Family  
 20 Passifloraceae -- Passion-flower family Family Tamaricaceae -- Tamarix family Family  
 Turneraceae -- Turnera family Family Violaceae -- Violet family Subclass Hamamelidae  
 Order Casuarinales Family Casuarinaceae -- She-oak family Order Fagales Family  
 Betulaceae -- Birch family Family Fagaceae -- Beech family Order Hamamelidales Family  
 Cercidiphyllaceae -- Katsura-tree family Family Hamamelidaceae -- Witch-hazel family  
 25 Family Platanaceae -- Plane-tree family Order Juglandales Family Juglandaceae -- Walnut  
 family Order Leitneriales Family Leitneriaceae -- Corkwood family Order Myricales Family  
 Myricaceae -- Bayberry family Order Urticales Family Cannabaceae -- Hemp family Family  
 Cecropiaceae -- Cecropia family Family Moraceae -- Mulberry family Family Ulmaceae --  
 Elm family Family Urticaceae -- Nettle family Subclass Magnoliidae Order Aristolochiales  
 30 Family Aristolochiaceae -- Birthwort family Order Illiciales Family Illiciaceae -- Star-anise  
 family Family Schisandraceae -- Schisandra family Order Laurales Family Calycanthaceae --  
 Strawberry-shrub family Family Hernandiaceae -- Hernandia family Family Lauraceae --



- Laurel family Family Monimiaceae -- Monimia family Order Magnoliales Family  
 Annonaceae -- Custard-apple family Family Canellaceae -- Canella family Family  
 Magnoliaceae -- Magnolia family Family Myristicaceae -- Nutmeg family Family  
 Sonneratiaceae -- Sonneratia family Family Winteraceae -- Wintera family Order  
 5 Nymphaeales Family Cabombaceae -- Water-shield family Family Ceratophyllaceae --  
 Hornwort family Family Nelumbonaceae -- Lotus-lily family Family Nymphaeaceae --  
 Water-lily family Order Papaverales Family Fumariaceae -- Fumitory family Family  
 Papaveraceae -- Poppy family Order Piperales Family Chloranthaceae -- Chloranthus family  
 Family Piperaceae -- Pepper family Family Saururaceae -- Lizard's-tail family Order  
 10 Ranunculales Family Berberidaceae -- Barberry family Family Lardizabalaceae --  
 Lardizabala family Family Menispermaceae -- Moonseed family Family Ranunculaceae --  
 Buttercup family Family Sabiaceae -- Sabia family Subclass Rosidae Order Apiales Family  
 Apiaceae -- Carrot family Family Araliaceae -- Ginseng family Order Celastrales Family  
 Aquifoliaceae -- Holly family Family Celastraceae -- Bittersweet family Family  
 15 Corynocarpaceae -- Karaka family Family Hippocrateaceae -- Hippocratea family Family  
 Icacinaceae -- Icacina family Family Stackhousiaceae -- Stackhousia family Order Cornales  
 Family Cornaceae -- Dogwood family Family Garryaceae -- Silk Tassel family Family  
 Nyssaceae -- Sour Gum family Order Euphorbiales Family Buxaceae -- Boxwood family  
 Family Euphorbiaceae -- Spurge family Family Simmondsiaceae -- Jojoba family Order  
 20 Fabales Family Fabaceae -- Pea family Order Geraniales Family Balsaminaceae -- Touch-me-  
 not family Family Geraniaceae -- Geranium family Family Limnanthaceae -- Meadow-Foam  
 family Family Oxalidaceae -- Wood-Sorrel family Family Tropaeolaceae -- Nasturtium  
 family Order Haloragales Family Gunneraceae -- Gunnera family Family Haloragaceae --  
 Water Milfoil family Order Linales Family Erythroxylaceae -- Coca family Family Linaceae -  
 25 - Flax family Order Myrtales Family Combretaceae -- Indian Almond family Family  
 Lythraceae -- Loosestrife family Family Melastomataceae -- Melastome family Family  
 Myrtaceae -- Myrtle family Family Onagraceae -- Evening Primrose family Family  
 Punicaceae -- Pomegranate family Family Thymelaeaceae -- Mezereum family Family  
 Trapaceae -- Water Chestnut family Order Podostemales Family Podostemaceae -- River-  
 30 weed family Order Polygalales Family Krameriaceae -- Krameria family Family  
 Malpighiaceae -- Barbados Cherry family Family Polygalaceae -- Milkwort family Order  
 Proteales Family Proteaceae -- Protea family Order Rafflesiales Family Rafflesiaceae --

- Rafflesia family Order Rhamnales Family Elaeagnaceae -- Oleaster family Family Rhamnaceae -- Buckthorn family Family Vitaceae -- Grape family Order Rhizophorales Family Rhizophoraceae -- Red Mangrove family Order Rosales Family Brunelliaceae -- Brunellia family Family Chrysobalanaceae -- Cocoa-plum family Family Connaraceae --**
- 5 **Cannarus family Family Crassulaceae -- Stonecrop family Family Crossosomataceae -- Crossosoma family Family Cunoniaceae -- Cunonia family Family Grossulariaceae -- Currant family Family Hydrangeaceae -- Hydrangea family Family Pittosporaceae -- Pittosporum family Family Rosaceae -- Rose family Family Saxifragaceae -- Saxifrage family Family Surianaceae -- Suriana family Order Santalales Family Balanophoraceae -- Balanophora**
- 10 **family Family Eremolepidaceae -- Catkin-mistletoe family Family Loranthaceae -- Showy Mistletoe family Family Olacaceae -- Olax family Family Santalaceae -- Sandalwood family Family Viscaceae -- Christmas Mistletoe family Order Sapindales Family Aceraceae -- Maple family Family Anacardiaceae -- Sumac family Family Burseraceae -- Frankincense family Family Hippocastanaceae -- Horse-chestnut family Family Meliaceae -- Mahogany family**
- 15 **Family Rutaceae -- Rue family Family Sapindaceae -- Soapberry family Family Simaroubaceae -- Quassia family Family Staphyleaceae -- Bladdernut family Family Zygophyllaceae -- Creosote-bush family.**

- In one embodiment, potential plants comprise: Atropa Belladonna, Erythrinia glabeliferus,**
- 20 **Ipomea tricolor, Erythrinia crista, Celosia cristata, Gallium sporium, Laurus nobilis, Vitis labrissa, Gratiola officinalis, Symphitium officinalis, Hosta fortuna, Casia hebecarpa, Thalictrum flavum, Scutellarian altissima, Portulaca oleacea, Scutellaria certicola, Physalis creticola, Geum fanieri, Gentiana tibetica, Linium hirsutum, Aconitum napellus, Podophyllum amodii, Thymus cretaceus, Hosta fortunea, Carlina acaulis, Charnaechrista**
- 25 **fasciculata, Pinus pinea, Pegamun hamalis, Tamarindus india, Carica papaya, Cistus incanus, Capparis spinosa inemis, Cupress lusitanica, Diopiros kaka, Erungium campestre, Aesculus woerlitzenis, Aesculus hippocastanum, Cupressus sempervirens, Celtis occidentalis, Polygonum cuspidatum, Eleagnus angustifolia, Eleagnus cemutata, Gentiana macrophilla, Brassica napa, Sesbania exaltata, Sesbania speciosa, Spartina potentiflora, Brassica juncea,**
- 30 **Helianthus annus, Puansetia sp., Pelargonium zonale, Sundapsis spp., Leontopodium alpinum, Lupinus luteaus, Buxus microphilla "japonica", Liatris spinata, Rimula japonica, Betula nigra, Filipendula vulgrais, Lobelia siphitica, Gravilia robusta, Reseda luteola,**

Gentiana littoralis, Campanula carpatica, Aesculus hypocastanum, Aesculus waertilensis,  
 Ageratum conizoides, Psidium guajava, Ailantus altissima, Buxus microphylla "japonica",  
 Hydrocotyle asiatica, Gravilea robusta, Brugmansia suaveolens, Thymus puliglodes, Thymus  
 lemabarona, Thymus serphylum (wild), Gaultheria procumbens, Thymus serphylum, Thymus  
 5 camosus, Thymus thrasicus, Calicatus floridus, Zingiber officinalis, Lapia dulcis, Thymus  
 vulgaris "argenteus", Thymus praecox "arcticus", Thymus puleglodes "lemons", Thymus  
 speciosa, Thymus carnosus, Thymus pseudolamginosus, Thymus praecox, Thymus vulgaris  
 "oregano", Ficus religiosa, Forsithsia suspensa, Chelidonium majus, Thymus wooly, Thymus  
 portugalense, Nicotiana tabacum, Thymus cytridorus "aureus", Thymus vulgaris, Cactus  
 10 officinalis, Lal lab purpurea, Juglands regia, Actinidia chinensis, Hernerocalis spp., Betula  
 pendula, Gardenia jasminoides, Taxodium dixticum, Magnolia loebheril, Crataegus  
 praegophyrum, Larix dedidua, Tuja orientalis "ellegantissima", Tula occidentalis "columbia",  
 Xeupressocyparis deylandii, Pseudotsuga menzisia, Abies firma, Fautenousus qualiqualia,  
 Alium cernum (wild), Juniperus "blue pacific", Taraxacum officinalis, Juca sp., Ilex  
 15 agnifolium, Tsuga canadensis "penola", Ilex cornuta, Taxus hiksii, Taxus media,  
 Metasequoia glyptotrobioldes, Pinus bungiana, Boxus sempervirens, Stevartia coreana,  
 Prunus xocane, Betula daurica, Plantago minor, Acer palmatum "burgundy", Acer campestre,  
 Cotynus cogygria, Quercus robur "fastigiata", Acer truncatum, Archirantus bidentata, Alum  
 japonica, Carum capsicum, Agastache mexuicana, Prunella vulgaris, Tagetes minuta, Nepeta  
 20 cataria, Ratibiunda columnus-Fera, Aster-Nova anglicae, Mirica certifera, Pittisporum tibica,  
 Taxodium dixticum (H<sub>2</sub>O), Taxodium dixticum (Acetic acid), Plantago major, Scotch pine,  
 Asorum canadensis, Pieras japonica, Pinus sirtrobus, Trifolium pratense, Prunus serotica,  
 Darura stramonium, Geranium maculata, Hydrocotyle asiatica, Astragulus sinicus, Centauria  
 maculata, Ruschia indurata, Myrthus comunis, Platanus acidentalis, Liclum barbatum,  
 25 Lavandula officinalis, Gravilea robusta, Hyppoach rhamnoides, Filipendula ulmaria, Betula  
 pendula, Polygonium odoratum, Brugmansi graveolens (ralf), Rhus toxicodenta, Armoraica  
 ristica, Ficus benjaminii, Sluffera sp., Pelagonium zonale, Allium sp., Asimina triloba, Lippa  
 dulcis, Epilobium augustifolium, Brugmansia suaveolens (old), Brugmansia suaveolens  
 (young), Xanthosoma sagittifolium (leaf), Xanthosoma sagittifolium (stem), Monstera  
 30 deliciosa, Aglaonema commutatus, Dieffenbachia leopoldii, Anthurium andreanum,  
 Syngoniurn podophyllum, Dracaena fragrans, Ananas comosus, Strelitzia reglinae,  
 Dieffenbachia segiunae, Syngoniurn aurutum, Dracaena sp., Hhaemanthus katharina,

- Anthurium altersianum*, *Spathiphyllum grandiflorum*, *Spathiphyllum cochlearispatum*,  
*Monstera pertusa*, *Anthurium magnificum*, *Anthurium hookeri*, *Anthurium elegans*, *Calathea*  
*zebrina*, *Yucca elephantipes*, *Bromelia balansae*, *Musa textilis* (Leaf), *Musa textilis* (Stem),  
*Myrthus communis*, *Olea olcaster*, *Olea europaea*, *Verium oleander*, *Cocculus laurifolius*,  
5 *Microsorium punctatum*, *Ficus* sp., *Senseviera* sp., *Adansonia digitata*, *Boechimeria boloba*,  
*Piper nigrum*, *Phymatosorus scolopendria*, *Turnera ulmifolia*, *Nicodemia diversifolia*,  
*Tapeinochilos spectabilis*, *Rauwolfia tetraphylla*, *Ficus elastica*, *Cycas cirinalis*, *Caryota*  
*ureus*, *Cynnamonum zeylonicum*, *Aechmea luddemoniana*, *Foenix zeulonica*, *Ficus*  
*benamina*, *Ficus pumila*, *Murraya exotica*, *Trevesia sungaica*, *Clerodendrum speciossicum*,  
10 *Actinidi colonicta*, *Paeonia lactiflora*, *Paeonia suffructicisa*, *Quercus imbricaria*, *Iris alida*,  
*Portulaca olleracea*, *Poligonum aviculare*, *Iris pseudocarpus*, *Allium nutans*, *Allium*  
*fistulosum*, *Antericum ramosum*, *Veratrum nigrum*, *Poligornun latifolia*, *Hosta lancefolia*,  
*Hosta zibalda*, *Echinops sphae*, *Paeonia daurica*, *Inula hilenium*, *Trambe pontica*, *Digitalis*  
*lutea*, *Bactisia australis*, *Austolachia australis*, *Hissopus zeraucharicus*, *Feucrium hamedris*,  
15 *Sedum album*, *Heraclelum pubescens*, *Origanum vulgare*, *Cachris alpina*, *Haser trilobum*,  
*Matteucia strutioporis*, *Sedum telchium*, *Bocconia cordata*, *Hiuga reptans*, *Talictum minus*,  
*Anemona japonica*, *Clematis rectae*, *Talictum* sp., *Alchemilla* sp., *Potentilla alba*, *Poterium*  
*sangiusorba*, *Minispermum dauricum*, *Oxobachus nictogenea*, *Armoracea rusticana*, *Cramble*  
*cardifolia*, *Agrimonia eupatora*, *Uchusa* sp., *Polymonium ceruleum*, *Valeriana officinalis*,  
20 *Pulmonaria molissima*, *Stachis lanata*, *Coronolla varia*, *Platicada grandiflora*, *Lavandula*  
*officinalis*, *Vincetocsicum officinalis*, *Acolypha hispida*, *Gnetum guemon*, *Psychotria*  
*nigropunctata*, *Psychotria methbacteriodomasica*, *Cobiaeum varilartum*, *Phyllanthus*  
*grandifolium*, *Pterigota alata*, *Pachyra affinis*, *Sterulia elata*, *Phylidendron speciosus*,  
*Pithecelobium unguis*, *Sanchezia nobilis*, *Oreopanax capitata*, *Ficus triangularis*, *Pigelia*  
25 *pennata*, *Piper chaba*, *Laurus nobilis*, *Erythrinia caffra*, *Metrosideros excelsa*, *Osmanthus*  
*spp.*, *Cupressus sempervirens*, *Jacobinia* sp., *Senecio platifilla*, *Livistona fragrans*, *Tetraclinis*  
*articulata hinensis*, *Eucaliptus rudis*, *Podocarpus spinulosus*, *Eriobotria japonica*, *Gingko*  
*biloba*, *Rhododendron* spp., *Thuja occidentalis*, *Fagopyrum suffruticosum*, *Geum*  
*macrophyllum*, *Magnolia cobus*, *Vinca minor*, *Convalaria majalis*, *Corylus avelana*, *Barbaric*  
30 *sp.*, *Rosa multiflora*, *Ostrea carpinifolia*, *Ostrea connote*, *Quercus rubra*, *Tulip tree*, *Sorbus*  
*aucuparia*, *Betula nigra* (leaf), *Betula nigra* (flower), *Castanea sativa*, *Bergenia crassifolia*,  
*Artemisia dracunculus*, *Ruta graveolens*, *Quercus nigra*, *Schisandra chinensis*, *Betula alba*,

Sambucus niora, Gentiana cruciata, Encephalaris horridum, Phebodium aureum, Microlepidia  
 platphylla, Ceratoramia mexicana, Steptochlaena tenuifolia, Adiantum trapeziformis,  
 Adiantum radiatum, Lycopodium japonicum, Aesopteria crasifolia, Asplenium australasicum,  
 Agatis robusta, Osmunda regalis, Osmundastrum claytonionum, Phyllitis scolopendrium,  
 5 Polyschium braunii, Crytomium fortunei, Dryopteris filis-max, Equisetum variegatum,  
 Anthyrium nopponicum, Anthyrium filis-femina, Parthenosicus tricuspidata, Ligustum  
 vulgare, Charnaeciparis pisifera, Rosa cocanica, Citinis coggriaria, Pinus strobus, Celtis  
 occidentalis, Picea schrenkiana, Cydonia oblonga, Ulmus pumila, Euonomus verrucosa,  
 Deutria scabra, Mespilus germanica, Quercus castanufolia, Euonomus europea, Seruginea  
 10 suffruticisa, Keyleiteria paniculata, Seringa josiceae, Zelcova, carpinifolia, Abies  
 cephalonica, Taccus bacata, Taxus cuspidata, Salis babilonics, Thuja occidentalis, Actinidia  
 colomicta, Magonia agrifolia, Aralis mandshurica, Luglands nigra, Euonimus elata, Princepia  
 sp., Forsitsia europea, Sorbocotoneaster sp., Morus alba, Crategus macrophyllum, Euomia  
 ulurifolia, Sorbus cominicta, Philodendron amurense, Comus mass, Korria japonica, Parrotia  
 15 persica, Jasminum frutocarus, Sulda sanganea, Pentaphylloides fruticosa, Sibirea altaiensis,  
 Cerasus japonica, Kolkwitzia amabilis, Amigdalus nana, Acer mandshurica, Salix  
 tamarisifolia, Amelanchier spicata, Cerasus maghabab, Prunus cerasifera, Coryllus avelana,  
 Acer tataricum, Viburnum opulus, Siringa vulgaris, Fraxinus exelsior, Quercus trojana,  
 Chaernomelis superba, Pinus salinifolia, Berberis vulgaris, Cotoneaster horisontalis,  
 20 Cotoneaster fangianus, Fagus silvatica, Pinus pumila, Pinus silvestris and Berberis thungergi.

Another interesting group of plants that can be considered as plants and/or potential plants of  
 the invention comprise the plants that are indigenous to arid regions, for example, those  
 located between 35 north latitude and 35 south latitude. In accordance with the present  
 25 invention potential extracts and extracts of the invention can be obtained from from plants  
 selected from the group comprising: the agave, Agavaceae, family including such members  
 as: Yucca elata, Y. breviflora, Agave deserti, A. chrysantha, Dasyilirion wheeleri; the  
 buckwheat, Polygonaceae, family, such as Eriogonum fasciculatum; the crowfoot,  
 Ranunculaceae, family, such as Delphinium scaposum, Anemone tuberosa and D. parishii;  
 30 the poppy, Papaveraceae, family, including Platystemon californicus, Argemone pleiacantha,  
 Corydalis aurea, Eschschoizia californica and Ar. corymbosa; members of the mustard,  
 Cruciferae, family, such as Dithyrea californica, Streptanthus carinatus and Lesquerella

gordoni; members of the legume, Leguminosae, family, such as *Acacia greggii*, *Prosopis velutina*, *A. constricta*, *Senna covesii*, *Cercidium floridum*, *C. microphyllum*, *Lotus huministratus*, *Krameria parvifolia*, *Parkinsonia aculeata*, *Calliendia eriophylla*, *Lupinus arizonicus*, *Olyneya tesota*, *Astragalus lentiginosus*, *Psorothamunus spinosus* and *Lupinus sparsiflorus*; members of the loasa family, Loasaceae, including *Mentzelia involucrata*, *M. pumila* and *Mohavea Confertiflora*; members of the cactus, Cactaceae, family, such as *Carnegiea gigantea*, *Opuntia leptocaulis*, *Ferocactus wislizenii*, *O. bigelovii*, *O. pheacantha*, *O. versicolor*, *O. fulgida*, *Echinocereus engelmannii*, *Mammillaria microcarpa*, *O. basilaris*, *Stenocereus thurberi*, *O. violacea*, *M. tetrancistra*, *O. ramosissima*, *O. acanthocarpa*, *E. pectinatus* and *O. arbuscula*; members of the evening primrose, Onagraceae, family, such as *Oenothera deltoides*, *Camissonia claviformis* and *Oe. primiveris*; members of the milkweed, Asclepiadaceae, family, including *Asclepias erosa*, *A. sublata* and *Sarcostemma cynanchoides*; members of the borage, Boraginaceae, family, such as *Cryptantha augusti folia* and *Amsinckia intermedia*; members of the sunflower, Compositae, family, including *Baccharis sarothroides*, *Monoptilon belloides*, *Erierson divergens*, *Zinnia acerosa*, *Melampodium leucanthum*, *Chaenactis fremontii*, *Calycoseris wrightii*, *Malaöthrix californica*, *Helianthus annuus*, *H. niveus*, *Geraea canescens*, *Hymenothrix wislizenii*, *Encelia farinosa*, *Psilostrophe cooperi*, *Baileya multiradiata*, *Bebbia juncea*, *Senecio douglasii*, *Trixis californica*, *Machaeranthera tephrodes*, *Xylorhiza tortifolia*, *Cirsium neomexicanum*, *Antennaria parviflora* and *Ch. douglasii*; members of the caltrop, Zygophyllaceae, family, including *Larrea tridentata* and *Kallstroemia grandiflora*; members of the mallow, Malvaceae, family, including *Hibiscus coulteri*, *H. denudatus* and *Sphaeralcea ambigua*; members of the phlox, Polemoniaceae, family, such as *Luanthus aureus*; members of the unicorn plant, Martyniaceae, family, such as *Proboscidea altheaefolia*; members of the gourd, Cucurbitaceae, family, such as *Cucurbita digitata*; members of the lily, Lilaceae, family, including *Calochortus kennedyi*, *Dichelostemma pulchellum*, *Allium macropetalum* and *Hesperocallis indulata*; members of the ocotillo, Fouquieriaceae, family, including *Fouquieria splendens*; members of the figwort, Scrophulariaceae, family, such as *Castilleja sp.*, *Penstemon parryi* and *Orthocarpus purpurascens*; members of the acanthus, Acanthaceae, family, including *Anisacanthus thurberi*, *Justicia californica* and *Ruellia nudiflora*; members of the four o'clock, Nyctaginaceae, family, such as *Allionia incarnata*, *Abronia villosa* and *Mirabilis multiflora*; members of the geranium, Geraniaceae, family, including *Erodium*

cicutarium; members of the waterleaf, Hydrophyllaceae, family, such as *Nama demissum*,  
*Phacelia bombycina* and *Ph. distans*; members of the bignonia, Bignoniaceae, family, such as  
*Chilopsis linearis*; members of the vervain, Verbenaceae, family, including *Glandularia*  
*gooddugii* and *Verbena neomexicana*; members of the mint, Labiatae, family, such as *Hyptis*  
5 *emoryi* and *Salvia columbariae*; members of the broomrape, Orobanchaceae, family, such as  
*Orobanche cooperi*; members of the portulaca, Portulacaceae, family, such as *Talinum*  
*aurantiacum*; members of the carpet-weed, Aizoaceae, family, such as *Sesuvium*  
*verrucosum*; members of the flax, Linaceae, family, such as *Linum lewisii*; members of the  
potato, Solanaceae, family, including *Nicotiana trigonophylla* and *Physalis lobata*; and  
10 members of the cochlospermum, Cochlospermaceae, family, such as *Amoreuxia palmatifida*.

#### *Pre-Harvest Treatment*

Once a potential plant is selected, a pre-harvest treatment is selected, wherein the treatment  
can be water or water in combination with a stressor, elicitor, or inducor. One skilled in the  
15 art would appreciate to perform the procedure with water and then with a series of stressors in  
order to determine whether the potential plant becomes an extract of the invention which  
demonstrates inhibitory activity against one or more extracellular proteases.

In one embodiment, this invention relates to altering the amount and/or composition of  
20 extracellular protease inhibitory activity by stressing a plant by chemical elicitors which act  
as stressor agent and activated defence plants pathways as mechanical wounding, drought,  
heat, or cold before tissue collection and extraction.

In one embodiment, stress involves exposing plants to a solution of one or more chemical  
25 elicitors to induce defense metabolic pathways and secondary metabolites prior to collection  
of plant tissues. Known chemical elicitors reported in the literature include ozone, hydrogen  
peroxide, jasmonic acid and its derivatives, arachidonic acid, salicylic acid and ester  
derivatives, alpha- and gamma-linoleic acids, volicitin, peptides, oligopeptides, saccharides,  
oligosaccharides such as chitosan, and synthetic chemicals such as Benzo-1,2,3-thiadiazole-7-  
30 carbathioic acid S-methyl ester (BTH).

A stressor may be one or more organic compounds. Some exemplary compounds that may

be used as a stressor include Jasmonic acid, Jamonic acid lower alkyl esters,  $\alpha$ -linoleic acid,  $\alpha$ -linoleic acid lower alkyl esters,  $\gamma$ -linoleic acid,  $\gamma$ -linoleic acid lower alkyl esters, Arachidonic acid, Arachidonic acid lower alkyl esters, salicylic acid.

- 5 A stressor may be able to induce abiotic stresses in plants. Thus, for example, plants can be treated with one or more chemical or mechanical stresses prior to tissue collection. Mechanical stress can be performed twelve hours to ten days prior to tissue collection. In one embodiment, mechanical stress can be performed one day to three days prior to tissue collection. In one embodiment, mechanical stress can be performed three to six days prior to tissue collection. In one embodiment, mechanical stress can be performed four to eight days prior to tissue collection. In one embodiment, mechanical stress can be performed six to ten days prior to tissue collection.

- 15 Chemical stress can be induced by spraying plant material once or more than once with an aqueous or alcoholic solution of the chemical elicitor one hour to 10 days prior to tissue collection. In one embodiment, chemical stress can be induced one day to three days prior to harvesting the plant tissue; in one embodiment, chemical stress can be induced two to four days prior to harvesting the plant tissue; in one embodiment, chemical stress can be induced five to ten days prior to harvesting the plant tissue.

- 20 A chemical stress can be added by feeding a plant with an aqueous or alcoholic solution of the chemical. Likewise, the plants can be stressed by airborne transport of the chemical agents one hour to ten days prior tissue collection. In one embodiment, plants can be treated by spray one day before collection. In one embodiment, such chemical stress can be induced one hour to three days prior to harvesting the plant tissue; in one embodiment, such chemical stress can be induced two to eight days prior to harvesting the plant tissue; in one embodiment, such chemical stress can be induced five to ten days prior to harvesting the plant tissue.

- 30 Any combination of the above-mentioned stressors and treatment regimes can be employed to induce the production or enhanced production of one or more extracellular proteases. One skilled in the art would be able to determine from the results of the assay against the panel of



extracellular proteases whether it is desirable to follow one or more of the stressor regimes.

*Harvesting the Plant Material for Extraction and Optional Storage Treatment*

The plant material may be used immediately after pre-harvest treatment, or it may be desirable to store the plant material for a period of time, prior to performing the extraction procedure(s). In one embodiment, the plant material could be treated prior to storage. In such cases, the treatment could include drying, freezing, lyophilizing, or some combination thereof.

- 10 Following treatment to prepare the plant material for storage, the plant material may be stored for an extended period of time, prior to contacting the plant material with the first solvent. In one embodiment the plant material is stored less than one week. In one embodiment the plant material is stored from one week to one month. In one embodiment the plant material is stored from one month to six months. In one embodiment the plant material is stored from
- 15 four months to one year. In one embodiment the plant material is stored longer than one year.

*The Extraction Process*

- As depicted in Figure 1, there are generally three basic extraction processes which can be performed in sequence to generate potential pre-extracts. The procedure for each Extraction process entails contacting the solid plant material with a solvent with adequate mixing and for an amount of time to ensure adequate exposure of the solid material to the solvent to enable inhibitory activity to be taken up by the solvent. Solvent A, B and C generally represent separate classes of solvents, for example, aqueous, alcoholic and organic. They are generally applied in a polar to non-polar order. They can be applied in a non-polar to polar order,
- 25 however, in each case the solid matter must be dried prior to contacting the solid matter with the subsequent solvent. The liquid is then separated from the solid (insoluble) matter by a process known to those skilled in the art, to generate two fractions: the liquid fraction which is a potential pre-extract and a solid fraction.

- 30 The term "liquid" is used to denote a distinction from the solid, insoluble matter. Thus, a liquid, which may be converted to a gas or function in a gaseous form, as in the case with steam, for example can serve as a solvent. Likewise, other non-solid solvents may be used

such as highly viscous liquids or other gaseous solvents, some of which can then be converted into a liquid phase.

A liquid solvent may also indicate a composition or a mixture of solvents. Common examples include a buffered aqueous solution, such as a TRIS-HCl buffer, or an ethanol/methanol combination.

In one embodiment, selected parts of a plant (which can be fresh, dried or frozen) can be crushed either mechanically, using a grinder or any device to break plant parts into small particles, or by freezing them in liquid nitrogen. In another embodiment, plant particles can be extracted with an aqueous TRIS-HCl buffer at pH 6 – 8, in one embodiment pH 7, from 30 minutes to 8 hours, in one embodiment 30 min to 2 hours, at a temperature between 4 to 50°C, in one embodiment 4 to 25 °C; in one embodiment, 4 – 10 °C. In one embodiment, extraction can be performed at 4 °C for 30 minutes.

The solid material can be separated from the solvent by centrifugation, filtration or any other means known to those of skill in the art to separate solids from a solution, to yield aqueous, alcoholic or organic extract, a potential pre-extract. These potential pre-extracts can be tested directly by a panel of extracellular proteases for the ability to inhibit extracellular protease activity, and/or subjected to further separation procedures to generate a potential extract as described below.

The remaining solid can be contacted with a second solvent, such as an alcoholic solvent and a cosolvent, methanol or water. In one embodiment, ethanol is used as alcoholic solvent, wherein the range of ethanol:methanol, ranges from 50:50 to 85:15, and 10 minute to one hour, in one embodiment 15 to 30 minute extraction time, at a temperature range of 4 to 25 °C in one embodiment, 4 to 10 °C in one embodiment, and 4 °C in another embodiment. Adequate contact of the solvent with the plant material can be encouraged by shaking the solid suspension for 15 min to 24 hour at a temperature ranging from 4 to 50 °C.

The alcoholic extract is recovered and separated from the solids by centrifugation (the material which is insoluble in alcohol is used for organic extraction(s)). The potential pre-

extract can be dried using a lyophilizer, a speed vac, a rotary evaporator, or a vacuum pump and dried under vacuum in order to remove the solvent. The dried extract can be dissolved in Tis-HCl buffer wherein the pH is between pH 6 to pH 8, in one embodiment and at pH 7 in one embodiment, and assayed against the panel of extracellular proteases for its bioactivity or, as in the case of the aqueous extract, the alcoholic extract can be treated to obtain purified extracts, as described below.

The organic extract can be obtained by shaking the residual solid for one to twenty-four hours in one embodiment, for one to fifteen hours in one embodiment, one to eight in one embodiment, one to four in one embodiment, with an organic solvent such as diethylether, hexane, dichloromethane, or ethylacetate. The solid can be separated by centrifugation or by filtration (regular or suction) and the organic solvent removed by distillation or by using a rotating evaporator. The organic extract can be dissolved in an aqueous buffer, or a mixture of an aqueous buffer and a suitable solvent (such as dimethylsulfoxide), to evaluate its bioactivity. In one embodiment the organic extracts are prepared using dichloromethane as the solvent of extraction, and the extraction is performed at room temperature for 2 hours.

Are included in the invention extracts prepared by all known large, medium and small-scale methods to prepare extracts.

#### *Determination of the Ability of the Extract to Modulate Cellular Activity*

There are a number of assays known to one skilled in the art, which can be used to test an extract for the ability to modulate cellular activity, such as modulating angiogenesis or cellular invasion, for example. Some assays are described in Examples IV – VII, below.

#### *Determination of Extracellular Protease Inhibitory Activity in an Extract*

In order to prepare various embodiments of the invention, (i.e., extracts, compositions and formulations with extracellular protease inhibitory activity) one requires techniques for measuring qualitatively and/or quantitatively the presence of such inhibitory activity. One skilled in the art would appreciate that there are numerous methods and techniques for measuring such activity, that can be used to determine, for example, which extracts are of interest and to follow the processing of the active ingredient(s) giving rise to such activity.

Currently, there are several assays to measure MMP, elastase and cathepsins activity (for a review of these methods, see Murphy and Crabbe, In Barrett (ed.) *Methods in Enzymology. Proteolytic Enzymes: Aspartic Acid and Metallopeptidases* (New York: Academic Press, 1995)-248: 470. One method, the gelatinolytic assay, is based on the degradation of radio-labelled type I collagen. Although this method is relatively sensitive, it requires the use of radio-labelled specific substrates.

Another widely-used technique is the zymography assay. In this assay, MMP, elastase and cathepsins activity is detected by the presence of negatively-stained bands following electrophoresis in substrate-impregnated SDS polyacrylamide gels. The zymography assay is a sensitive and quantitative method for the detection of various MMPs, elastase, cathepsins and TACE in biological samples; nonetheless, it is labour intensive and has a low dynamic range. Zymography, moreover, is not suitable to measure the intrinsic net activity in biological samples: SDS dissociates MMP-TIMP complexes and activates latent enzyme forms. This is particularly important since matrix degradation ultimately depends on the ratio of free active gelatinase to latent proenzyme or TIMP-complexed forms.

A microtitreplate assay has been developed recently (Pacmen *et al.*, (1996) *Biochem. Pharm.* 52: 105-111). This assay provides measurement of net biological enzymatic activity of MMP, does not require a radioisotope safety environment, and could be used efficiently for routine measurement of inhibitory activity of MMP; however, it is not likely to be highly efficient as a diagnostic test since the incubation times are long and the sensitivity is much lower than that obtained by standard zymography and radio-labelled substrate assays.

Other methods used auto-quenched fluorogenic substrates. Many fluorogenic substrates have been designed for the quantification of MMPs, elastase, and cathepsins activity through fluorescent level variation measuring (reviewed by Nagase and Fields (1996) *Biopolymers* 40: 399-416),

Fluorescence polarization assays were based on the principle that when fluorescent molecules are excited with plane polarized light, they will emit light in the same polarized plane

provided that the molecule remains stationary throughout the excited state. However, if the excited molecule rotates or tumbles during the excited state, then light is emitted in a plane different from the excitation plane. If vertically polarized light is used to excite the fluorophore, the emission light intensity can be monitored in both the original vertical plane and also the horizontal plane. The degree to which the emission intensity moves from the vertical to horizontal plane is related to the mobility of the fluorescently labeled molecule. If fluorescently labeled molecules are very large, they move very little during the excited state interval, and the emitted light remains highly polarized with respect to the excitation plane. If fluorescently labeled molecules are small, they rotate or tumble faster, and the resulting emitted light is depolarized relative to the excitation plane. Therefore, FP can be used to follow any biochemical reaction which results in a change in molecular size of a fluorescently labeled molecule (e.g. protein-DNA interactions; immunoassays; receptor-ligand interactions; degradation reactions). (Adapted from Bolger R, Checovich W. (1994) *Biotechniques* 17(3):585-9.).

Another method uses the fluorescent activated substrate conversion (FASC) assay described in Canadian Patent No. 2,189,486 (1996) and in St-Pierre *et al.*, (1996) *Cytometry* 25: 374-380.

#### *The Commercial Process for Preparing Extracts of the Invention*

Extracts of the invention can be prepared on a commercial scale by repeating the extraction process that results in an optimal composition of extracts demonstrating an inhibitory activity of interest. As demonstrated in Figure 3, one would simply scale-up the procedure and include steps of quality control to ensure reproducible results for the resulting extracts.

#### *Methods of Purifying or Fractionating Active Ingredients from Plant Extracts*

There are a number of techniques well known in the art for isolating protease inhibitors from natural sources. For example, purifications can be performed using centrifugation, ultracentrifugation, filtration, liquid or gas phase chromatography (including size exclusion, affinity, etc.) with or without high pressure, lyophilisation, evaporation, precipitation with various "carriers" (PVPP, carbon, antibody, etc.), or any combination thereof. One skilled in the art, would appreciate how to use the following options, in a

sequential fashion, in order to enrich each successive fraction in the activity of interest by following its activity throughout the purification procedure, using one of the assays for the inhibitory activity against an extracellular protease of interest, as defined above.

- 5 The present invention also includes compounds, chemicals, active principles, and purified or concentrated extracts that could be obtained by purification, partial purification, and/or fractionation of plant extracts that are subject of the invention. Purification, partial purification, and/or fractionation can be achieved by any methods known by those skilled in the art. These methods include, but are not limited to: solid-liquid extraction, liquid-liquid  
10 extraction, solid-phase extraction (SPE), membrane and ultrafiltration, dialysis, chromatography, selective precipitation, electrophoresis, and solvent concentration.

Solid-liquid extraction means include the use of all possible solvents known from those in the art, and covers the use of supercritical solvents, soxhlet extractors, vortex shaker, ultrasounds  
15 and any other means to enhance extraction, as well as recovery by filtration, centrifugation and any related methods as described in the literature (R. J. P. Cannell, Natural Products Isolation, Humana Press, 1998). The solvent is selected from the group consisting of, but not limited to, hydrocarbon, chlorinated solvents, organic esters, organic ethers, alcohols, water, and mixtures thereof. In the case of supercritical fluid extraction, the invention also covers the  
20 use of modifiers as described in V. H. Bright, M. Eé Pé McNally, Supercritical Fluid Technology, ACS Symp. Ser. Vol. 488, ch. 22, 1999.

Liquid-liquid extraction means include the use of any mixture of solvents known from those in the art, including solvents under supercritical conditions. Typical solvents include, but are  
25 not limited to, hydrocarbon, chlorinated solvents, organic esters, organic ethers, alcohols, water, and all possible aqueous solutions. The liquid-liquid extraction can be effected manually, semi-automated or completely automated, and the solvent can be removed or concentrated by any usual techniques known from those in the art (S. Ahuja, Handbook of Bioseparations, Academic Press, 2000).

30 Solid-phase extraction (SPE) means include techniques using cartridges, columns or any other devices used in this technique and known in the art. The sorbents that may be used with

this method include but are not limited to silica gel (normal phase), reverse phase silica gel (modified silica gel), ion-exchange resins, and fluorisil. The invention also includes the use of scavenger resins or any others trapping reagents attached to solid supports derived from organic or inorganic macromolecular materials to remove selectively active ingredients or any constituents from said extracts.

Membrane, reverse osmosis and ultrafiltration means include the use of all types of membranes known from those in the art, as well as the use of pressure, vacuum, centrifugal force, and/or any other means that can be utilized in membrane and ultrafiltration processes (S. Ahuja, Handbook of Bioseparations, Academic Press, 2000).

Dialysis means include membranes having molecular weight cut-offs varying from less than 0.5 KDa to larger than 50 KDa. The invention also covers the recovery of purified and/or fractionated extracts from either the dialysate or the retentate by any means known in the art including but not limited to evaporation, reduced pressure evaporation, distillation, vacuum distillation, and lyophilization.

Chromatographic means include all means of carrying out chromatography known by those skilled in the art and described in G. Sofer, L. Hagel, Handbook of Process Chromatography, Academic Press, 1997. Fractionation, partial purification, and/or purification can be carried out by but not limited to regular column chromatography, flash chromatography, high performance liquid chromatography (HPLC), medium pressure liquid chromatography (MPLC), supercritical fluid chromatography (SFC), countercurrent chromatography (CCC), moving bed chromatography, simulated moving bed chromatography, expanded bed chromatography, and planar chromatography. With every chromatographic methods, sorbents that may be used include but is not limited to silica gel, alumina, fluorisil, cellulose and modified celluloses, all possible modified silica gels, all types of ion-exchange resins, all types of size exclusion gels and any other sorbents known from those skilled in the art and described in T. Hanai, HPLC: A Practical Guide, RSC Press, UK 1999. The present invention also includes the use of two or more solvent gradients to effect the fractionation, partial purification, and/or purification of said active extracts in any chromatographic methods. The solvents that may be utilized include but are not limited to hexanes, pentane, petroleum

ethers, cyclohexane, heptane, diethyl ether, methanol, ethanol, isopropanol, propanol, butanol, isobutanol, tert-butanol, water, dichloromethane, dichloroethane, ethyl acetate, tetrahydrofurane, dioxane, tert-butyl methyl ether, acetone, and 2-butanone. When water or and aqueous phase is used, it may contains certain amounts of iorganic or organic salts and  
5 the pH may be adjusted to different values with an acid or a base to enhance fractionation and/or purification.

In the case of planar chromatography, the present invention includes the use of all variants of this type of chromatography including but not limited to one- and two dimension thin-layer  
10 chromatography (1D- and 2D-TLC), high performance thin-layer chromatography (HPTLC), and centrifugal thin-layer chromatography (centrifugal TLC).

In the case of countercurrent chromatography (CCC), the present invention includes the use of manual, semi-automated, and automated systems, and the use of all possible solvents and  
15 solvent combinations necessary to effect fractionation and/or purification of said active extracts as described in W. D. Conway, R. J. Petroski, Modern Countercurrent Chromatography, ACS Symp. Ser. Vol. 593, 1995. Solvent removal and/or concentration can be effected by any means known by those skilled in the art, including but not limited to reduced pressure evaporation, evaporation, reduced pressure distillation, distillation, and  
20 lyophilization.

The present invention includes the fractionation, partial purification, and purification of said active plant extracts by expanded bed chromatography, moving and simulated moving bed chromatography, and any other related methods known by those skilled in the art and  
25 described in G. Sofer, L. Hagel, Handbook of Process Chromatography, Academic Press, 1997 and S. Ahuja, Handbook of Bioseparations, Academic Press, 2000.

Selective precipitation means includes the use of all possible solvents and solvent combinations, the use of temperature changes, the addition of precipitent and/or modifiers,  
30 and/or modifying the pH by adding a base or an acid to effect a selective precipitation of active principles or any other constituents.



Further, the present invention covers the fractionation, partial purification, and purification of said active plant extracts by electrophoresis and other related techniques known to those skilled in the art.

- 5 The invention also includes the fractionation, partial purification, and/or purification of said active plant extracts by steam distillation, hydrodistillation, or any other related methods of distillation known from those in the art (L. M. Harwood, C. J. Moody, *Experimental Organic Chemistry*, Blackwell Scientific Publications, UK, 1989).
- 10 The process of purifying the active component(s) also includes the concentration of purified or partially purified chemicals, active ingredients, active principles by solvent removal of said plant extracts and/or fractionated plant extracts, and/or purified plant extracts. The techniques of solvent removal are known to those skilled in the art and include but are not limited to rotary evaporation, distillation (normal and reduced pressure), centrifugal vacuum
- 15 evaporation (speed-vac), and lyophilization.

One embodiment of the invention includes the concentration of chemicals, active ingredients, active principles by solvent removal of said plant extracts and/or fractionated plant extracts, and/or purified plant extracts. The techniques of solvent removal are known to those skilled in

20 the art and include but are not limited to rotary evaporation, distillation (normal and reduced pressure), centrifugal vacuum evaporation (speed-vac), and lyophilization.

#### *Preparing the Formulation for Administration*

- The target extracellular proteolytic activity to be inhibited is determined, for example,
- 25 experimentally or from the literature. A formulation having the capacity to inhibit this extracellular proteolytic activity is prepared. This formulation comprises inhibitory activity having the capacity to inhibit one or more extracellular proteases implicated in the degradation of extracellular tissue as part of the biological condition or disease state. The active ingredient may be either proteinaceous or non-proteinaceous. The active ingredient
- 30 must have the capacity to inhibit at least one of the active proteases in the physiological or pathological process targeted, with a good inhibition constant ( $K_i$ ). These formulations must also have acceptable toxicity and stability. If the formulation is administered by different

means other than topically (e.g. via oral, intraperitoneal, intravenous, subcutaneous, intramuscular etc. routes), then the substances must have an acceptable hepatotoxicity and must be sufficiently resistant to degradation to allow them to reach their site of activity. Finally, the composition must be formulated in a manner to enable administration to the mammal in need of such treatment. The composition may be in a solid or liquid formulation, which may be a cream, gel or ointment (for a topical application), or gel-cap, tablet or capsule (for oral administration), or any other formulation capable of administration to mammals.

Criteria which must be considered in the preparation of a formulation include, but are not limited to, the physicochemical and biochemical characteristics (bioavailability, toxicity, stability, etc.) of the substances which make up the formulation. In particular, the formulation is prepared so as to preserve, as much as possible, the maximum inhibitory activity of the active components upon administration, via the appropriate route for the disease state or the targeted biological condition, without being harmful to the organism. The overall capacity for inhibition of proteolytic activity in the formulation must correlate with the proteolytic overactivity profile of the disease state or biological condition targeted.

Pharmaceutical compositions may be formulated by mixing the active components, i.e. the MMP, elastase, TACE and/or cathepsins inhibitors, together with a physiologically acceptable carrier, excipient, binder, diluent, etc. and administering the mixture as a pharmaceutical composition. Alternatively, the active components can be formulated independently and the respective formulations can then be extemporaneously admixed using a diluent or the like and administered, or can be administered independently of each other, either concurrently or at staggered times to the same subject.

One embodiment of the invention relates to the preparation of pharmaceutical compositions comprising a therapeutically effective amount of the above said active material or mix of active materials and a pharmaceutically acceptable carrier, diluent, vehicle, or excipient. The pharmaceutical compositions according to the invention may be adapted for oral (capsules, tablets, phials, etc.), parenteral, rectal, inhalation, or topical administration, including creams, gels, etc. and may be in unit dosage form. Also, the composition may be adapted for slow release *in vivo* as known in the art.

The pharmaceutical compositions of the invention may be used in conventional formulations, including but not limited to solutions, syrups, emulsions, injectables, tablets, capsules, suppositories, hydrophobic and hydrophilic creams and lotions.

5

In a further embodiment, the invention relates to the preparation of cosmetic and dermatological compositions comprising said active materials or mix of said active materials showing significant inhibitory activity towards MMPs, cathepsins, elastase, or other therapeutically relevant mammalian proteolytic enzymes involved in skin disorders, in particular psoriasis and eczema, and in skin ageing.

10

The compositions may also be used to improve skin texture and to treat sun damaged or wrinkled skin. Cosmetic compositions of said active materials can take the form of lotion, cream, gel, or solution. The said active materials can be used alone or with other skin treatment compositions, including but not limited to Aloe Vera.

15

Yet, in a further embodiment, the invention relates to the preparation of herbal remedies and nutraceutical compositions comprising solid parts of said edible plants or a mixture of said edible plants, or their extracts which extracts show significant inhibitory activity towards MMPs, cathepsins, elastase, or other therapeutically relevant mammalian proteolytic enzymes.

20

The said active materials can be used in these herbal remedies and nutraceutical compositions as solutions, purified solutions, or dry powders after treatment described below.

25

The compositions of the present invention may be administered orally, topically, parenterally, by inhalation or spray or rectally in dosage unit formulations containing conventional non-toxic pharmaceutically acceptable carriers, adjuvants and vehicles. The term parenteral as used herein includes subcutaneous injections, intravenous, intramuscular, intrasternal injection or infusion techniques. One or more protease inhibitor may be present in association with one or more non-toxic pharmaceutically acceptable carriers and/or diluents and/or adjuvants and, if desired, other active ingredients. The pharmaceutical compositions

30

containing one or more protease inhibitor may be in a form suitable for oral use, for example, as tablets, troches, lozenges, aqueous or oily suspensions, dispersible powders or granules, emulsion hard or soft capsules, or syrups or elixirs.

- 5 Formulations intended for oral use may be prepared according to any known to the art for the manufacture of pharmaceutical compositions and such compositions may contain one or more agents selected from the group consisting of sweetening agents, flavouring agents, colouring agents and preserving agents in order to provide pharmaceutically elegant and palatable preparations. Tablets contain the active ingredient in admixture with non-toxic
- 10 pharmaceutically acceptable excipients which are suitable for the manufacture of tablets. These excipients may be for example, inert diluents, such as calcium carbonate, sodium carbonate, lactose, calcium phosphate or sodium phosphate: granulating and disintegrating agents for example, corn starch, or alginic acid: binding agents, for example starch, gelatin or acacia, and lubricating agents, for example magnesium stearate, stearic acid or talc. The
- 15 tablets may be uncoated or they may be coated by known techniques to delay disintegration and absorption in the gastrointestinal tract and thereby provide a sustained action over a longer period. For example, a time delay material such as glyceryl monostearate or glyceryl distearate may be employed.
- 20 Formulations for oral use may also be presented as hard gelatin capsules wherein the active ingredient is mixed with an inert solid diluent, for example, calcium carbonate, calcium phosphate or kaolin, or as soft gelatin capsules wherein the active ingredient is mixed with water or an oil medium, for example peanut oil, liquid paraffin or olive oil.
- 25 Aqueous suspensions contain active materials in admixture with excipients suitable for the manufacture of aqueous suspensions. Such excipients are suspending agents, for example sodium carboxymethylcellulose, methyl cellulose, hydropropylmethylcellulose, sodium alginate, polyvinylpyrrolidone, gum tragacanth and gum acacia: dispersing or wetting agents may be a naturally-occurring phosphatide, for example, lecithin, or condensation products of
- 30 an alkylene oxide with fatty acids, for example polyoxyethylene stearate, or condensation products of ethylene oxide with long chain aliphatic alcohols, for example hepta-decaethyleneoxycetanol, or condensation products of ethylene oxide with partial esters

derived from fatty acids and a hexitol such as polyoxyethylene sorbitol monooleate, or condensation products of ethylene oxide with partial esters derived from fatty acids and hexitol anhydrides, for example polyethylene sorbitan monooleate. The aqueous suspensions may also contain one or more preservatives, for example ethyl, or *n*-propyl *p*-hydroxy-  
5 benzoate, one or more colouring agents, one or more flavouring agents or one or more sweetening agents, such as sucrose or saccharin.

Oily suspensions may be formulated by suspending the active ingredients in a vegetable oil, for example arachis oil, olive oil, sesame oil or coconut oil, or in a mineral oil such as liquid  
10 paraffin. The oily suspensions may contain a thickening agent, for example beeswax, hard paraffin or cetyl alcohol. Sweetening agents such as those set forth above, and flavouring agents may be added to provide palatable oral preparations. These compositions may be preserved by the addition of an anti-oxidant such as ascorbic acid.

15 Dispersible powders and granules suitable for preparation of an aqueous suspension by the addition of water provide the active ingredient in admixture with a dispersing or wetting agent, suspending agent and one or more preservatives. Suitable dispersing or wetting agents and suspending agents are exemplified by those already mentioned above. Additional excipients, for example sweetening, flavouring and colouring agents, may also be present.

20 Pharmaceutical compositions of the invention may also be in the form of oil-in-water emulsions. The oils phase may be a vegetable oil, for example olive oil or arachis oil, or a mineral oil, for example liquid paraffin or mixtures of these. Suitable emulsifying agents may be naturally-occurring gums, for example gum acacia or gum tragacanth, naturally-  
25 occurring phosphatides, for example soy bean, lecithin, and esters or partial esters derived from fatty acids and hexitol, anhydrides, for example sorbitan monooleate, and condensation products of the said partial esters with ethylene oxide, for example polyoxyethylene sorbitan monooleate. The emulsions may also contain sweetening and flavouring agents.

30 Syrups and elixirs may be formulated with sweetening agents, for example glycerol, propylene glycol, sorbitol or sucrose. Such formulations may also contain a demulcent, a preservative and flavouring and colouring agents. The pharmaceutical compositions may be

in the form of a sterile injectable aqueous or oleaginous suspension. This suspension may be formulation according to known art using those suitable dispersing or wetting agents and suspending agents which have been mentioned above. The sterile injectable preparation may also be sterile injectable solution or suspension in a non-toxic parentally acceptable diluent or solvent, for example as a solution in 1,3-butanediol. Among the acceptable vehicles and solvents that may be employed are water, Ringer's solution and isotonic sodium chloride solution. In addition, sterile, fixed oils are conventionally employed as a solvent or suspending medium. For this purpose any bland fixed oil may be employed including synthetic mono- or diglycerides. In addition, fatty acids such as oleic acid find use in the preparation of injectables.

To get a better understanding of the invention described herein, the following examples are set forth. It should be understood that these examples are for illustrative purposes only. Therefore, they should not limit the scope of this invention in any way.

## EXAMPLES

### EXAMPLE I: *Preparation of Stressed and Non-stressed Plant Extracts*

Pre-Harvest Treatment Aerial parts of a living plant are sprayed with an aqueous solution of gamma linolenic acid (6,9,12-Octadecatrienoic acid, Sigma L-2378) (stress G) or arachidonic acid (5,8,11,14-Eicosatetraenoic acid, Sigma A-3925) (stress A) (400  $\mu$ M in water with 0.125% (v/v) Triton X-100) to completely cover the leaves.

#### *Harvest Solid S1 and Optional Storage Treatment*

Twenty to twenty-four hours after the stress, more than 4 grams of leaves, stems, fruit, flowers, seeds or other plant parts are harvested and frozen immediately in dry ice, then transferred as soon as possible to a -20°C freezer until use. Plant materials may be stored at -20 C for a long period of time, more than a year, without losing inhibitory activity. Temperature is monitored to ensure a constant condition.

Stressed and non-stressed plant specimens are collected as wet samples and stored at  $-20^{\circ}\text{C}$  for various periods of time, and are submitted to a process which generates 3 subfractions: aqueous, ethanolic and organic fractions. Complete extraction process are performed in a continuous cycle using the following steps. An initial 5g of plant specimen is homogenized in liquid nitrogen with a blender. The resulting powder is weighed.

*Extraction Process I: Aqueous Extraction*

To each 4.5 grams of plant powder, 12 ml of a cold solution of 100 mM Tris, pH 7.0 is added.

The mixture is thoroughly vortexed for 2 minutes. The mixture is kept on ice for 30 minutes and vortexed after each 10 minute period of time. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4500 rpm. The resulting supernatant is decanted in a 15 ml tube after filtration with a Miracloth™ filter. This extract is therefore referred as the Potential Pre-Extract A. The pellet, referred as Solid S2, is kept for ethanolic extraction.

The aqueous extract (Potential Pre-Extract A) is further purified in order to determine its extracellular protease inhibition capability. The Potential Pre-Extract A is purified by size-exclusion chromatography, wherein the aqueous extract is chromatographed on a calibrated Sephadex G-25 column (1 × 10 cm) using a 20 mM Tris-HCl, 150 mM NaCl, pH 7.5 buffer as eluant. Fractions corresponding to compounds that seem to have a molecular weight (MW) less than 1500 daltons (D) are pooled to constitute the purified aqueous extract that is tested for inhibitory activity in an assay as described in Example II.

Prior to this analysis, the extract is treated with 10% gelatin-Sepharose (Pharmacia Biotech, Uppsala, Sw.) in order to remove unspecific enzyme ligands. To 1mL of extract, 100μL of gelatin-Sepharose resin is added in a microassay tube, the solution in the tube is mixed, kept on ice for 30 minutes, and then centrifuged 5 minutes at 5,000rpm. The supernatant is removed and used directly for assays.

*Extraction Process II: Alcholic Extraction*

To the pellet, Solid S2, collected from the previous aqueous extraction, 12 ml of cold ethanol:methanol (85:15) is added and the mixture is thoroughly vortexed for 2 minutes. The

mixture is kept on ice for 30 minutes and vortexed every 10 minutes. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4,500 rpm. The resulting supernatant is decanted in a 15 ml tube after filtration with a Miracloth™ filter. The pellet, referred as Solid S3 is kept for the subsequent organic extraction. This extract is therefore referred as the

5 Potential Pre-Extract B.

The ethanolic extract, Potential Pre-Extract B, is purified by liquid/liquid extraction prior to analysis by enzymatic assay. For this purpose, 1 ml of ethanolic extract is evaporated under vacuum, dissolved in 150 µl of dimethylsulfoxide (DMSO), and completed to a final volume

10 of 1.5 ml with Tris buffer (final concentration: Tris-HCl 20 mM; pH 7.5). Four ml of hexane is added to the Tris phase in a glass tube and the tube is thoroughly vortexed, then allowed to form a biphasic liquid. The organic phase is removed and the extract is submitted to a second round of liquid/liquid extraction. The aqueous phase is removed and treated with 10% gelatin-Sepharose (Pharmacia Biotech, Uppsala, Sw.) to remove unspecific enzyme ligands

15 prior to conducting subsequent assays. To 1 ml of extract, 100µL of gelatin-Sepharose resin is added in a microassay tube, the tube is mixed, kept on ice for 30 minutes, and then centrifuged 5 minutes at 5,000rpm. Supernatant is removed and used directly for assays as described in Example II.

20 *Extraction Process III: Organic Extraction*

To the pellet, Solid S3, collected from previous ethanolic extraction, 12 ml of cold dichloromethane is added and the mixture is thoroughly vortexed for 2 minutes. The mixture is kept on ice for 30 minutes and vortexed after each 10 minutes period. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4,500 rpm. The resulting supernatant is

25 decanted in a 15 ml glass tube after filtration with a Miracloth™ filter. The final pellet is discarded. The organic solvent is evaporated under vacuum and the phase is dissolved with dimethylsulfoxide (DMSO). This extract is therefore referred as the Potential Pre-Extract C, which was further purified by solid phase extraction prior to analysis by enzymatic assay.

30 In order to assay the Potential Pre-Extract C, the organic extract is diluted 1:10 in a solution of DMSO:Methanol:Tris (20mM, pH 7.5) (10 :50 :40) (Solution A), ie, 220 µl of extract is added to 2.0 ml of solution A. After 10 seconds of vigorous vortex, the mix is sonicated for



10 seconds. Dissolved extracts are subsequently applied to a solid phase extraction plate (Discovery SPE-96, Sigma Chemical Co, St-Louis, Mo). After initial conditioning of the columns with 1 ml of methanol, columns are equilibrated with solution A, and extract samples are deposited on the columns. Elution is completed with solution A (final volume of 2 ml) and this fraction is used directly in assays as described in Example II.

#### **EXAMPLE II: *In vitro* Enzyme Inhibition Assays**

The inhibitory activity of sample compositions towards human MMP-1, human MMP-2, human MMP-3, human MMP-9, human cathepsin-B, human cathepsin-D, human cathepsin-G, human cathepsin-L, human cathepsin-K, human leukocyte elastase (HLE), bacteria clostripain and bacteria subtilisin can be determined using either fluorogenic substrates or the FASC assay.

#### **Measurement of human MMP-1, -2, -3 and -9 activity with fluorogenic peptidic substrates**

MMP-1, -2, -9 are purified from natural sources (human immortalized cell lines: 8505C (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH) for MMP-1, HT-1080 (ATCC, Manassas, VA) for MMP-2 and THP-1 (ATCC, Manassas, VA) for MMP-9) as described in literature and based on protocols found in I.M. Clark: «*Matrix metalloproteinases protocols*», Humana Press (2001). Recombinant human MMP-3 is overexpressed in *E. Coli* and purified according to Windsor LJ, Steele DL (2001), *Methods Mol Biol* 151:191-205. Proteolytic activity of these proteases is evaluated with the assay based on the cleavage of autoquenched peptide substrate : (MCA-Pro-Leu-Gly-Leu-Dpa-Ala-Arg-NH<sub>2</sub> ·TFA [Dpa = N-3-(2,4-dinitrophenyl)-L-2,3-diaminopropionyl]) for MMP-1, -2, and -9; and, MCA-Arg-Pro-Lys-Pro-Val-Glu-Nva-Trp-Arg-Lys(DNP)-NH<sub>2</sub> (DNP = 2,4-dinitrophenyl; Nva = L-norvaline) for MMP-3 (Calbiochem, San Diego, CA). In the intact peptide, Dpa or DNP quenches the MCA fluorescence. Cleavage of the peptide causes release of the fluorescent MCA group which is then quantitated on a fluorometer (Gemini XS, Molecular Devices, Sunnyvale, CA). The assay is performed in TNCZ assay buffer (20mM Tris-HCl; NaCl 150mM; CaCl<sub>2</sub> 5mM; ZnCl<sub>2</sub> 0.5mM; pH 7.5) with human purified proteases (I.M. Clark: «*Matrix metalloproteinases protocols*», Humana Press (2001). The substrate, primarily dissolved in DMSO is then redissolved in TNCZ buffer for the assay. In a typical assay, 10 µl of purified enzyme (1-50 ng) and 5µl of dissolved substrate (final concentration of 10 µM) is mixed in a final volume of 75 µl (completed with

TNCZ). All assays were performed in 96 well plate and the reaction is started by the addition of substrate. Assays are measured (excitation 325 nm, emission 392 nm) for 20, 40 and 60 minutes.

**Measurement of human Cathepsin L and K activity with fluorogenic peptidic substrate.**

- 5 Human recombinant cathepsins L and K are overexpressed in *P. Pastoris* according to Krupa JC, Mort JS. (2000), Anal Biochem 283(1):99-103. The assay is similar to the previous except for the auto-quenched peptidic substrate : Z-Arg-Phe-AMC, 2HCl (Bachem California, Torrance, CA) and reaction buffer. Assays for Cathepsin L are performed in 20mM acetate pH 5.5, 1mM EDTA buffer and assays for Cathepsin K in 20mM acetate pH 10 4.2, 1mM EDTA. Assays are monitored with fluorometer settled at excitation 380 nm/emission 460 nm wavelengths (Krupa JC, Mort JS. (2000), Anal Biochem 283(1):99-103).

**Measurement of human MMP-9, Cathepsin B, Cathepsin G, and human leukocyte elastase**

- 15 (HLE) activity using the FASC assay

- Human Cathepsin B and G and human leukocyte elastase are obtained from Calbiochem (San Diego, CA). Human MMP-9 is purified as previously described. The assay is based on the method described in Canadian Patent No. 2,189,486 (1996) and in St-Pierre et al., (1996) Cytometry 25:374-380. For the assay, 5 µl of the purified enzyme (1-100 ng), 5 µl of 20 concentrated buffer solution (20mM Tris-HCl; NaCl 150mM; CaCl<sub>2</sub> 5mM; ZnCl<sub>2</sub> 0.5mM; pH 20 7.5), and 5 µl of gelatin-FITC beads are typically used in a final volume of 100 µl. The assay is performed by incubation of the reaction mixture for 90 minutes at 37°C. The reaction is stopped by the transfer of the mix in 0.5 ml of 20 mM Tris, 150 mM NaCl; pH 9.5 buffer. This tube is analyzed in a flow cytometer (Epics MCL, Beckman Coulter, Mississauga, Ontario) as described 25 in Canadian Patent No. 2,189,486 (1996).

**Measurement of human Cathepsin D, Cathepsin B, Cathepsin G and HLE activity with a fluorogenic proteic substrate**

- Cathepsin D is purified from human MCF-7 cells according to Stewart AJ, Piggott NH, May FE, Westley BR. (1994), Int J Cancer 57(5):715-8. Cathepsin B, Cathepsin G and HLE are obtained 30 as previously described. The activities of Cathepsin D, Cathepsin B, Cathepsin G and HLE are measured by an assay based on the increase of fluorescence of a proteic substrate (Haemoglobin

in the case of Cathepsin D and B and beta-casein in the case of Cathepsin G and HLE) heavily labelled with Alexa-488 dye (Molecular Probes, Eugene, Or). The substrate, when highly labelled with the dye, will almost quench the dye fluorescence. Cleavage of the substrate will result in an increase of the fluorescence which can be measured with a spectrofluorometer, and which is proportional to protease activity. Typically, 10 µl of purified human Cathepsin D, Cathepsin B, Cathepsin G or HLE (10-50 ng) and 10µL of Hemoglobin-Alexa488 or beta-casein-Alexa488 (100 ng) are assayed in final volume of 75 µl adjusted with 20 mM citrate pH 3.3 buffer in the case of Cathepsins D and B or TNCZ buffer in the case of Cathepsin G and HLE. The reaction is performed as already described except that the fluorescence is read at excitation 488 nm/emission 525 nm wavelengths.

#### Subtilisin assay

Subtilisin (isolated from *B. Subtilis*) is purchased from Fluka. Assays are performed with a fluorogenic peptide (Z-Gly-Gly-Leu-AMC, Bachem California, Torrance, CA) as already described for MMPs with the following modification: the assay is buffered with 20mM Tris, 150mM NaCl; pH 7.5 and the results are read at excitation 380 nm/emission 460 nm wavelengths.

#### Clostripain assay

Clostripain from *Clostridium histolyticum* (Worthington Lakewood, NJ) is prepared and activated as described by manufacturer's protocol. The activity is determined by using Z-Arg-Arg-AMC, 2HCl (Calbiochem, San Diego, CA) as a fluorogenic peptidic substrate and the incubation buffer is 75mM phosphate, pH 7.6. The reaction is performed as already described except that the fluorescence is read at excitation 380 nm/emission 460 nm wavelengths.

#### Extract inhibition assay

Before a typical assay, aqueous extracts prepared as described in Example I are preincubated with 1:10 of gelatin-Sepharose 4B™ for 30 minutes to remove fluorescence quenching. For the ethanolic extract, an initial hexane extraction is performed and samples are treated with 1:10 of gelatin-Sepharose 4B™ to remove quenching.

In a typical fluorescent assay, 10  $\mu$ l of purified enzyme at concentrations previously mentioned for the enzymatic assay, 5  $\mu$ l of dissolved fluorogenic peptid or 10  $\mu$ l of dissolved fluorescent proteic substrate (final concentration of 10  $\mu$ M) and 40  $\mu$ L of the aqueous, ethanolic or organic extract to be tested and prepared as described in Example I are mixed in a final volume of 75  $\mu$ l (completed with TNCZ for fluorogenic peptide substrate assay or 20mM citrate pH 3.3 buffer for fluorescent protein substrate assay). All assays are performed in 96 well plate and the reaction is started by the addition of substrate. Assays are measured (excitation 325 nm, emission 392 nm for peptide and excitation 488 nm/emission 525 nm wavelengths for protein) for 20, 40 and 60 minutes. Activity and inhibition values are determined from the increase in fluorescence

For the FASC assay, 35  $\mu$ l of the treated extract prepared as described in Example I, 5  $\mu$ l of the purified enzyme prepared as described previously, 5  $\mu$ l of concentrated buffer solution (TNCZ), and 5  $\mu$ l of gelatin-FITC beads are typically used. The initial step of the assay is the incubation of the reaction without beads for a 30 minutes period on ice to allow the binding of inhibitors to enzyme. Fluorescent beads are added and the reaction mix is incubated for 90 minutes at 37°C. The reaction is stopped by transfer of the mix in 0.5 ml of 20 mM Tris, 150 mM NaCl; pH 9.5 buffer. This tube is analyzed in the flow cytometer (Epics MCL, Beckman Coulter, Mississauga, Ontario) as described in Canadian Patent Application No. 2,189,486 (1996).

Results of the inhibition studies are shown in Tables 1- 12. Table 1 reports the inhibition of human MMP-1 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 2 reports the inhibition of human MMP-2 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 3 reports the inhibition of human MMP-3 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 4 reports the inhibition of human MMP-9 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 5 reports the inhibition of human Cathepsin B by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 6 reports the inhibition of human Cathepsin D by aqueous (A), ethanolic (R) and

organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 7 reports the inhibition of human Cathepsin G by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 8 reports the inhibition of human Cathepsin L by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 9 reports the inhibition of human Cathepsin K by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 10 reports the inhibition of HLE by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 11 reports the inhibition of bacteria subtilisin by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 12 reports the inhibition of bacterial clostripain by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. The inhibition is reported as percentage (%) of inhibition of substrate degradation as compared with the degradation without extract. The inhibition is reported as percentage (%) of inhibition of substrate degradation as compared with the degradation without extract.

**EXAMPLE III: Exemplary purification of inhibitory activity found in an extract**

Extracts were separated by HPLC on an Agilent 1100 system (San Fernando, CA). Briefly, 100µL of a crude extract prepared as described in Example I was applied on a C18 reverse-phase column (Purospher RP-18 5µm, 4.0 x 125mm (HP), Agilent, San Fernando, CA). Elution of compounds was achieved with a linear gradient of 10-85% acetonitrile. Fractions were collected, evaporated, resuspended in aqueous buffer and then reanalysed for their inhibition activity on specific enzymes as already described. Fractions of interest (demonstrating a biological activity) were then reisolated at a larger scale for further analysis and characterization.

**EXAMPLE IV: Exemplary demonstration of ability to modulate angiogenesis**

One example of a method of testing extracts for the ability to modulate angiogenesis is the HUVECs (Human Umbilical Vein Endothelial Cells from Clonetics) Growth inhibition assay. In a 96-well plate flat bottom Costar 3096 plate  $1.5 \times 10^3$  cell per well in 100µl of EGM-2 media (Clonetics). After 24 hours add 100µl of diluted extract (4 dilutions) and control drug

Fumagillin 10 µg/ml, GM6001 25 µM. Each dilution is done in quadruplicate. Incubate for 72 hours of culture at 37 C, 5%CO<sub>2</sub>. Add 10 µl of Alamar Blue (Medicorp) After 2 hours read in fluorescence Excitation 535nm Emission 595nm. Data are plotted as percentage of control proliferation (vehicle treated cells). IC<sub>50</sub> (drug concentration causing 50% inhibition) is calculated from the plotted data.

**EXAMPLE V: Exemplary demonstration of ability to modulate angiogenesis**

One example of a method of testing extracts for the ability to modulate angiogenesis is the Cord Formation Assay. In a 96-well plate flat bottom Costar 3096 plate add 60 µl of Matrigel 10 mg/ml (BD). Incubate for 30 minutes at 37 C, 5%CO<sub>2</sub>. Prepare a solution of 2.5x10<sup>5</sup> HUVEC per ml in EGM-2 mix 500 µl of this with 500 µl of 2X of the desired dilution or control drug (Fumagillin and GM6001) and add 200 µl per well. 4 dilutions of extract are tested in duplicate. Incubate for 18-24 hours at 37 C, 5%CO<sub>2</sub>. For 3 fields of each dilution, the number of junctions is measured. The effect of the extract (IC<sub>50</sub>) is assessed compared to untreated controls.

**EXAMPLE VI: Exemplary demonstration of ability to modulate angiogenesis**

One example of a method of testing extracts for the ability to modulate angiogenesis is the Cell Migration Assay. Migration is assessed using a Falcon 1185, Multiwell insert system 24-well format, PET membrane, 8 µm pore size. Coating of the insert with 10 µg/ml of Rat Tail Collagen I (BD). The bottom chamber wells receive 700 µl of EGM-2 is used as chemoattractant. The upper chamber receive a mixture of 100 µl of 1x10<sup>6</sup> HUVEC/ml with a 2X 100 µl of the desired dilution of extract. All prepared in DMEM-0,1%BSA. After 5h incubation at 37 C, 5%CO<sub>2</sub>, the membrane is rinsed with PBS, fixed and stained. The upper cells are wipe-off. 3 fields of each dilution are counted each dilution is done in duplicate. The effect of the extract (IC<sub>50</sub>) is assessed compared to untreated controls.

**EXAMPLE VII: Exemplary demonstration of ability to modulate cell invasion**

One example of a method of testing extracts for the ability to modulate cell invasion is the following assay. Falcon 1185, Multiwell insert system 24-well format, PET membrane, 8 µm pore size. Coating of the insert with 80 µg/cm<sup>2</sup> of Matrigel Growth Factor Reduced and let dry. (BD Biosciences). Before beginning rehydrate the Matrigel with 200 µl of DMEM. The upper chamber

receive a mixture of 100µl of  $2.5 \times 10^5$ /ml HT1080 (ATCC) cells with a 2X 100µl of the desired dilution of extract. All prepared in DMEM-0,1%BSA. Add 700µl of DMEM-5%SVF on the bottom side After 48hours of culture at 37 C, 5%CO<sub>2</sub>, the membrane is rinsed with PBS, fixed and stained. The upper cells are wipe-off. 3 fields of each dilution are counted each dilution is done in duplicate. The effect of the extract (IC<sub>50</sub>) is assessed compared to untreated controls.

*For CRL11147(ATCC)*

Coating of the insert with 80µg/cm<sup>2</sup> of Matrigel Growth Factor Reduced and let dry.

The upper chamber receive a mixture of 100µl of  $2.5 \times 10^5$ /ml CRL11147 (ATCC) cells with a 2X 100µl of the desired dilution of extract. 48hours of incubation.

*For PC-3 (ATCC)*

Coating of the insert with 60µg/cm<sup>2</sup> of Matrigel Growth Factor Reduced and let dry.

The upper chamber receive a mixture of 100µl of  $1.25 \times 10^5$ /ml PC-3 (ATCC) cells with a 2X 100µl of the desired dilution of extract. 72hours of incubation.

*For MDA-MB-231 (ATCC)*

Coating of the insert with 60µg/cm<sup>2</sup> of Matrigel Growth Factor Reduced and let dry.

The upper chamber receive a mixture of 100µl of  $1.25 \times 10^5$ /ml MDA (ATCC) cells with a 2X 100µl of the desired dilution of extract. 72hours of incubation.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	22.2
Acorus calamus	A	O	100.0
Actinidia arguta	A	O	58.4
Agastache foeniculum	A	S	30.4
Alchemilla mollis	A	4	36.4
Allium cepa	A	O	61.4
Allium grande	A	R	46.5
Allium porrum	A	R	25.0
Allium porrum	A	O	98.9
Allium porrum	A	O	42.5
Allium sativum	A	R	98.7
Allium sativum	A	R	22.3
Allium schoenoprasum	A	R	28.9
Allium Tuberousum	A	R	28.9
Allium Tuberousum	A	O	100.0
Althaea officinalis	A	S	21.6
Althaea officinalis	A	S	45.9
Angelica archangelica	A	R	34.6
Anthemis nobilis	A	O	100.0
Aralia nudicaulis	A	O	31.2
Armoracia rusticana	A	S	39.7
Armoracia rusticana	A	R	39.8
Aronia melanocarpa	A	O	67.6
Aster sp	A	O	24.1
Beckmannia eruciformis	A	O	41.2
Beta vulgaris	A	R	41.2
Beta vulgaris spp. Maritima	A	O	44.1
Brassica napus	A	O	28.3
Brassica oleracea	A	S	28.6
Brassica oleracea	A	R	33.8
Brassica oleracea	A	O	100.0
Brassica Oleracea	A	R	61.4
Brassica rapa	A	R	40.2
Calamintha nepeta	A	O	39.3
Camellia sinensis	A	R	34.3
Capsicum annuum	A	O	68.3
Capsicum annuum	A	O	68.3
Capsicum annuum	A	R	39.4
Capsicum frutescens	A	O	100.0
Chenopodium bonus-henricus	A	R	37.3
Chenopodium bonus-henricus	A	O	68.3
Chenopodium quinoa	A	O	68.3
Chenopodium quinoa	A	R	37.4
Chrysanthemum coronarium	A	R	22.0
Cichorium intybus	A	R	22.0
Cichorium intybus	A	S	68.9
Cichorium intybus	A	O	41.9
Citrullus lanatus	A	S	73.0
Cornus canadensis	A	O	100.0
Crataegus sp	A	O	100.0
Cucumis Anguria	A	S	34.2
Cucurbita moschata	A	O	27.3
Cucurbita pepo	A	O	84.9



Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Cymbopogon citratus	A	O	100.0
Cymbopogon citratus	A	R	22.1
Cyperus esculentus	A	R	25.8
Cyperus esculentus	A	O	28.1
Dactylis glomerata	A	O	25.5
Daucus carota	A	O	43.4
Daucus carota	A	R	100.0
Dipsacus sativus	A	O	35.3
Dirca palustris	A	S	47.9
Eruca vesicaria	A	R	33.7
Eschscholzia californica	A	O	61.1
Eschscholzia californica	A	R	74.1
Flilpendula rubra	A	O	51.7
Foeniculum vulgare	A	O	86.2
Fragaria x ananassa	A	O	23.7
Fragaria Xananassa	A	S	40.6
Fragaria x ananassa	A	R	28.3
Galinsoga ciliata	A	R	29.7
Gallium odoratum	A	6	48.8
Gauttheria hispida	A	R	23.9
Glycine max	A	R	24.7
Glycine max	A	S	29.6
Glycine max	A	O	100.0
Glycine max	A	S	39.4
Guizotia abyssinica	A	R	49.1
Hamamelis virginiana	A	O	95.9
Helianthus Tuberosus	A	R	25.0
Heliotropium arborescens	A	O	100.0
Hordeum hexastichon	A	O	46.2
Hordeum vulgare	A	O	43.8
Hordeum vulgare subsp. Vulgare	A	O	25.8
Inula helenium	A	O	27.1
Lathyrus sativus	A	O	34.4
Leonurus cardiaca	A	R	31.7
Levisticum officinale	A	O	39.0
Lolium multiflorum	A	O	100.0
Lotus corniculatus	A	R	22.8
Malva sylvestris	A	O	25.1
Matricaria recutita	A	R	48.1
Matteucia pennsylvanica	A	R	25.1
Medicago sativa	A	O	100.0
Melissa officinalis	A	O	60.1
Mentha piperita	A	O	35.1
Mentha suaveolens	A	O	100.0
Nepeta cataria	A	R	20.7
Nicotiana rustica	A	R	60.5
Origanum vulgare	A	O	73.2
Origanum vulgare	A	O	

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
<i>Perilla frutescens</i>	A	R	74.4
<i>Perilla frutescens</i>	A	O	92.4
<i>Petroselinum crispum</i>	A	R	77.4
<i>Phacelia tanacetifolia</i>	A	R	52.8
<i>Phaseolus coccineus</i>	A	R	20.9
<i>Phaseolus coccineus</i>	A	S	34.2
<i>Phaseolus Vulgaris</i>	A	S	29.2
<i>Phaseolus vulgaris</i>	A	R	56.1
<i>Phaseolus Vulgaris</i>	A	R	60.0
<i>Phaseolus Vulgaris</i>	A	O	100.0
<i>Phaseolus Vulgaris</i>	A	O	100.0
<i>Phlox paniculata</i>	A	S	100.0
<i>Pimpinella anisum</i>	A	R	72.2
<i>Pimpinella anisum</i>	A	R	23.7
<i>Plantago coronopus</i>	A	O	25.0
<i>Plectranthus sp.</i>	A	O	31.5
<i>Poa compressa</i>	A	R	71.2
<i>Potentilla anserina</i>	A	R	32.1
<i>Pysalis trocarpa</i>	A	O	31.5
<i>Raphanus raphanistrum</i>	A	O	100.0
<i>Raphanus sativus</i>	A	O	30.2
<i>Raphanus sativus</i>	A	O	79.1
<i>Rheum officinale</i>	A	R	22.9
<i>Rheum rhabarbarum</i>	A	R	32.8
<i>Rheum rhabarbarum</i>	A	O	100.0
<i>Ribes nigrum</i>	A	R	100.0
<i>Ribes nigrum</i>	A	R	48.6
<i>Ribes salivum</i>	A	S	26.5
<i>Ribes sylvestre</i>	A	R	100.0
<i>Ribes uva-crispa</i>	A	R	48.1
<i>Rubus canadensis</i>	A	R	53.1
<i>Rubus canadensis</i>	A	R	100.0
<i>Rubus idaeus</i>	A	O	100.0
<i>Salvia officianalis</i>	A	S	43.8
<i>Salvia sclarea</i>	A	R	100.0
<i>Satureja montana</i>	A	S	43.8
<i>Solanum dulcamara</i>	A	R	37.2
<i>Solanum melanocerasum</i>	A	R	100.0
<i>Solanum tuberosum</i>	A	O	100.0
<i>Sorghum dochna</i>	A	S	28.9
<i>Stachys byzantina</i>	A	S	33.1
<i>Stellaria media</i>	A	O	28.9
<i>Tanacetum parthenium</i>	A	R	76.0
<i>Tanacetum vulgare</i>	A	O	65.7
<i>Taraxacum officinale</i>	A	O	64.2
<i>Thymus praecox subsp arcticus</i>	A	R	68.2
<i>Thymus praecox subsp arcticus</i>	A	R	42.7

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Thymus x citriodorus	A	O	34.7
Trichosanthes kirilowii	A	R	31.8
Trifolium hybridum	A	R	96.0
Trifolium incarnatum	A	R	100.0
Trifolium pannonicum	A	R	27.7
Trifolium repens	A	R	79.5
Vaccinium angustifolium	A	R	52.5
Vaccinium macrocarpon	A	O	64.5
Vicia sativa	A	O	60.8
Vicia sativa	A	R	28.6
Vicia villosa	A	R	64.7
Vicia villosa	A	O	57.3
Vicia villosa	A	O	33.0
Vigna sesquipedalis	A	R	24.4
Vigna sesquipedalis	A	R	20.6
Vigna unguiculata	A	R	72.6
Vitis spp	A	R	100.0
Vitis spp	A	O	100.0
Zea Mays	A	R	99.2
Zea Mays	A	O	100.0
Abelmoschus esculentus	G	R	37.6
Aconitum napellus	G	O	100.0
Allium ampeloprasum	G	R	33.4
Allium ascalonicum	G	R	31.5
Allium cepa	G	O	34.4
Allium cepa	G	R	36.4
Allium sativum	G	R	53.2
Allium tuberosum	G	R	68.3
Althaea officinalis	G	O	47.7
Althaea officinalis	G	S	30.7
Althaea officinalis	G	S	44.3
Althaea officinalis	G	R	83.6
Althaea officinalis	G	S	44.3
Anethum graveolens	G	R	27.7
Aptium graveolens	G	R	51.8
Armoracia rusticana	G	O	47.1
Armoracia rusticana	G	S	47.1
Armoracia rusticana	G	S	66.5
Aronia melanocarpa	G	S	79.0
Artemisia dracunculus	G	R	50.3
Artemisia dracunculus	G	R	50.3
Asparagus officinalis	G	O	96.4
Asparagus officinalis	G	R	44.1
Bellis perennis	G	R	43.7
Beta vulgaris spp. Maritima	G	R	43.7
Beta vulgaris spp. Maritima	G	O	34.9
Beta vulgaris spp. Maritima	G	S	40.8
Betula glandulosa	G	S	40.8
Betula glandulosa	G	O	30.3
Borago officinalis	G	O	30.3
Borago officinalis	G	R	29.7
Borago officinalis	G	R	29.7
Brassica campestris	G	R	21.9

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Brassica oleracea	G	O	33.6
Brassica oleracea	G	O	100.0
Brassica rapa	G	O	42.5
Brassica rapa	G	R	40.2
Calamintha nepeta	G	O	28.7
Calendula officinalis L.	G	O	100.0
Camellia sinensis	G	O	46.4
Campanula rapunculus	G	R	27.2
Capsella bursa-pastoris	G	R	24.1
Capsicum annuum	G	O	36.0
Chaerophyllum bulbosum	G	R	38.9
Chenopodium quinoa	G	O	100.0
Cichorium intybus	G	S	44.6
Cirsium arvense	G	R	30.3
Citrus limon	G	R	21.2
Cucurbita pepo	G	O	59.5
Cucurbita Pepo	G	O	40.2
Cuminum cyminum	G	R	25.5
Cymbopogon citratus	G	R	33.7
Datura stramonium	G	O	73.5
Daucus carota	G	O	88.0
Daucus carota	G	O	27.9
Dryopteris filix-mas	G	O	21.9
Erysimum perfoliatum	G	O	24.4
Fagopyrum esculentum	G	O	100.0
Foeniculum vulgare	G	O	28.0
Foeniculum vulgare	G	R	57.3
Gaillardia hirsuta	G	O	44.2
Gaillardia hirsuta	G	R	94.8
Glechoma hederacea	G	O	25.5
Glycine max	G	S	100.0
Glycyrrhiza glabra	G	O	24.9
Guizotia abyssinica	G	R	30.3
Helianthus annuus	G	O	28.6
Helianthus annuus	G	O	33.6
Helianthus tuberosus	G	O	54.4
Hordeum vulgare	G	O	28.8
Hordeum vulgare subsp. Vulgare	G	R	28.1
Hypericum henryi	G	R	80.0
Iberis amara	G	O	44.6
Lactuca sativa	G	R	25.3
Lathyrus sylvestris	G	O	90.2
Lavandula angustifolia	G	R	22.5
Lepidium sativum	G	S	29.5
Levisticum officinale	G	O	100.0
Lolium multiflorum	G	O	24.9
Lolium multiflorum	G	R	27.1

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Lotus corniculatus	G	O	52.2
Lycopersicon esculentum	G	R	24.4
Lycopersicon pimpinellifolium	G	R	30.3
Malus hupehensis	G	R	65.8
Malva verticillata	G	R	43.1
Matricaria recutita	G	S	100.0
Matteucia pennsylvanica	G	R	57.5
Melissa officinalis	G	O	28.5
Mentha piperita	G	O	36.0
Mentha spicata	G	S	20.3
Mentha spicata	G	S	26.0
Mentha suaveolens	G	O	60.5
Nepeta cataria	G	O	24.1
Nicotiana rustica	G	R	28.1
Nicotiana tabacum	G	R	40.6
Oenothera biennis	G	R	28.4
Oenothera biennis	G	O	100.0
Origanum vulgare	G	S	100.0
Origanum vulgare	G	O	20.1
Origanum vulgare	G	O	85.4
Oryza Sativa	G	R	53.3
Panax quinquefolius	G	S	100.0
Panicum miliaceum	G	S	100.0
Passiflora caerulea	G	O	20.9
Pastinaca sativa	G	R	68.4
Pastinaca sativa	G	O	100.0
Pennisetum alopecuroides	G	R	100.0
Petroselinum crispum	G	R	73.0
Phalaris canariensis	G	O	100.0
Phaseolus coccineus	G	R	29.9
Phaseolus coccineus	G	R	67.6
Phaseolus coccineus	G	O	32.4
Phaseolus vulgaris	G	R	33.4
Phaseolus vulgaris	G	R	60.2
Phaseolus vulgaris	G	R	22.3
Phaseolus vulgaris	G	O	87.7
Phaseolus vulgaris	G	O	89.3
Phlox paniculata	G	O	37.0
Physalis pruinosa	G	R	48.1
Plantago coronopus	G	O	47.0
Plantago major	G	O	97.2
Plectranthus sp.	G	R	22.0
Potentilla anserina	G	O	21.2
Prunella vulgaris	G	O	95.9
Raphanus Raphanistrum	G	O	67.7
Raphanus sativus	G	O	40.6
Reseda odorata	G	O	82.1
Rheum officinale	G	O	

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Rheum rhabarbarum	G	R	48.1
Ribes Nigrum	G	R	100.0
Ribes Sylvestre	G	O	42.9
Ricinus communis	G	O	73.5
Rubus Phoenicalasius	G	R	31.4
Ruta graveolens	G	R	100.0
Salvia officinalis	G	R	100.0
Santolina	G	R	28.1
Satureja hortensis	G	R	100.0
Satureja repandra	G	O	57.1
Scrophularia nodosa	G	R	41.6
Scutellaria lateriflora	G	S	72.1
Sium sisarum	G	O	99.7
Solanum dukamara	G	R	65.4
Solanum melanocerasum	G	R	32.4
Solanum melongena	G	O	100.0
Solanum tuberosum	G	S	46.4
Sorghum cafferum	G	R	100.0
Sorghum dochna	G	R	51.4
Sorghum dochna	G	R	39.6
Sorghum sudanense	G	O	97.4
Stachys byzantina	G	O	41.4
Stellaria media	G	O	33.8
Symphytum officinale	G	O	52.0
Tanacetum parthenium	G	O	79.1
Tanacetum vulgare	G	O	100.0
Taraxacum officinale	G	S	25.9
Teucrium chamaedrys	G	O	100.0
Teucrium chamaedrys	G	R	48.0
Thymus praecox subsp arcticus	G	R	73.1
Thymus x citriodorus	G	O	52.2
Trichosanthes kirilowii	G	O	35.9
Trifolium hybridum	G	R	76.0
Trifolium incarnatum	G	R	73.4
Trifolium pannonicum	G	R	24.8
Trifolium repens	G	R	48.5
Trifolium repens	G	R	48.5
Trifolium repens	G	R	22.9
Triticum spelta	G	R	23.4
Tropaeolum majus	G	S	96.4
Urtica dioica	G	O	60.7
Vaccinium corymbosum	G	S	61.4
Vaccinium corymbosum	G	R	54.7
Vaccinium angustifolium	G	R	68.8
Vicia sativa	G	R	31.5
Vicia sativa	G	O	100.0
Vicia villosa	G	O	35.5
Vicia villosa	G	R	23.0
Vigna sesquipedalis	G	R	36.9
Vitis spp	G	R	

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Withania somnifera	G	O	44.0
Xanthium strumarium	G	R	37.6
Zea mays	G	O	100.0
Aconitum napellus	T	R	100.0
Agaricus bisporus	T	R	58.9
Agaricus bisporus	T	O	100.0
Allium ampetoprasum	T	R	43.3
Allium ascalonicum	T	R	34.5
Allium cepa	T	R	53.5
Allium cepa	T	O	45.8
Allium grande	T	R	43.2
Allium schoenoprasum	T	R	47.1
Allium tuberosum	T	R	74.6
Allium tuberosum	T	O	33.6
Allium tuberosum	T	R	34.1
Aloe vera	T	S	47.8
Athaea officinalis	T	R	59.1
Amelanchier alnifolia	T	O	100.0
Ananas comosus	T	O	22.7
Anthemis nobilis	T	O	56.8
Anthriscus cerefolium	T	R	29.8
Apium graveolens	T	O	100.0
Aralla nudicaulis	T	O	58.9
Amoracia rusticana	T	O	100.0
Artemisia dracunculus	T	R	25.2
Asparagus officinalis	T	R	44.7
Atriplex hortensis	T	R	58.1
Bellis perennis	T	R	37.3
Beta vulgaris	T	O	23.5
Betula glandulosa	T	S	64.2
Boletus edulis	T	R	35.6
Brassica juncea	T	O	100.0
Brassica napus	T	R	33.2
Brassica oleracea	T	O	49.7
Brassica oleracea	T	O	24.7
Camellia sinensis	T	R	45.7
Camellia sinensis	T	R	26.2
Canna edulis	T	O	100.0
Carum carvi	T	R	40.9
Chaerophyllum bulbosum	T	R	48.1
Chrysanthemum coronarium (Chp suey)	T	R	29.9
Chrysanthemum coronarium	T	R	100.0
Chrysanthemum coronarium	T	R	20.5
Cichorium endivia	T	R	21.9
Cichorium endivia	T	S	50.6
Cichorium intybus	T	R	31.7
Cichorium intybus	T	R	52.9
Cichorium intybus	T	O	100.0
Citrus lanatus	T	O	40.6
Citrus paradisi	T	O	40.6

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Cocos nucifera	T	O	27.2
Cornus canadensis	T	S	44.9
Crithmum maritimum	T	R	32.3
Cucumis anguria	T	O	22.6
Cucurbita moschata	T	O	33.5
Cucurbita moschata (Early Butternut)	T	R	32.3
Cucurbita pepo	T	O	89.0
Cuminum cyminum	T	R	54.3
Curcuma zedoaria	T	S	100.0
Cymbopogon citratus	T	O	42.6
Datura metel	T	O	24.8
Datura metel	T	R	26.5
Dioscorea batatas	T	R	100.0
Dipsacus sativus	T	O	85.0
Dryopteris filix-mas	T	O	46.4
Erigeron canadensis	T	O	100.0
Eruca vesicaria	T	R	30.9
Erysimum perofskianum	T	O	23.0
Eschscholzia californica	T	O	37.8
Eschscholzia californica	T	R	20.8
Fagopyrum esculentum	T	O	100.0
Fagopyrum tartaricum	T	R	78.5
Foeniculum vulgare	T	O	63.4
Foeniculum vulgare	T	O	27.2
Forsythia x intermedia	T	S	32.0
Fragaria x ananassa	T	S	33.0
Galinsoga ciliata	T	R	25.8
Gaulltheria procumbens	T	O	48.8
Hedeoma pulegioides	T	O	73.6
Helianthus tuberosus	T	O	39.3
Hordeum vulgare	T	O	32.4
Humulus lupulus	T	O	21.1
Hypericum henryi	T	R	29.3
Hypericum perforatum	T	R	42.7
Iberis amara	T	O	29.5
Ipomea aquatica	T	R	22.9
Lathyrus sativus	T	R	69.4
Laurus nobilis	T	O	70.2
Lavandula latifolia	T	O	100.0
Lens culinaris subsp. Culinaris	T	O	70.2
Lepidium sativum	T	O	100.0
Levisticum officinale	T	O	100.0
Lotium multiflorum	T	O	35.1
Lunaria annua	T	O	100.0
Lycopersicon pimpinellifolium	T	R	24.4
Malus hupehensis	T	R	73.1
Malus sp.	T	R	80.9
Malva sylvestris	T	R	34.7



Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Malva sylvestris	T	O	100.0
Manihot esculenta	T	R	33.0
Melissa officinalis	T	O	100.0
Melissa officinalis	T	O	100.0
Mentha suaveolens	T	S	39.7
Nigella sativa	T	R	58.9
Nigella sativa	T	R	100.0
Nigella sativa	T	R	100.0
Ocimum Basilicum	T	O	41.5
Origanum majorana	T	O	29.8
Origanum vulgare	T	R	33.1
Origanum vulgare	T	R	75.2
Panax quinquefolius	T	S	32.0
Passiflora spp.	T	R	20.8
Pastinaca sativa	T	R	55.4
Petroselinum crispum	T	R	76.1
Petroselinum crispum	T	O	24.1
Petroselinum crispum	T	O	21.0
Peucedanum oreoselinum	T	R	48.6
Phacelia tanacetifolia	T	O	56.4
Phalaris canariensis	T	R	22.7
Phaseolus coccineus	T	R	47.4
Phaseolus mungo	T	R	40.0
Phaseolus vulgaris	T	O	29.4
Phaseolus vulgaris	T	R	46.3
Phoenix dactylifera	T	R	28.9
Physalis ixocarpa goldie ou pourpre	T	O	100.0
Phytolacca americana	T	O	73.8
Plectranthus sp.	T	O	100.0
Pleurotus spp.	T	O	22.3
Poa compressa	T	O	73.1
Poa pratensis	T	O	100.0
Populus Tremula	T	O	38.0
Prunella vulgaris	T	S	96.4
Psoralea corylifolia	T	R	100.0
Pteridium aquilinum	T	O	100.0
Raphanus raphanistrum	T	R	33.7
Raphanus sativus	T	R	28.0
Raphanus sativus	T	O	100.0
Raphanus sativus	T	S	69.6
Reseda luteola	T	O	51.8
Reseda odorata	T	O	46.7
Rheum officinale	T	S	100.0
Rheum officinale	T	R	30.0
Ribes nigrum	T	R	61.7
Ribes Salivum	T	R	75.4
Ribes Sylvestre	T	S	100.0
Ricinus communis	T	S	100.0

Table I  
MMP-1 Inhibition

Nom latin	Stress	Extrait	Inhibition (%)
Rosmarinus officinalis	T	R	29.0
Rubus canadensis	T	R	86.1
Sabal serrulata	T	R	100.0
Salvia officinalis	T	O	100.0
Sambucus canadensis	T	O	24.8
Satureja montana	T	R	100.0
Satureja repandra	T	S	27.2
Satureja repandra	T	O	36.4
Satureja repandra	T	R	42.0
Satureja repandra	T	R	68.8
Scrophularia nodosa	T	O	100.0
Secale cereale	T	R	23.2
Setaria italica	T	O	73.5
Silybum marianum	T	R	20.1
Solanum melongena	T	S	24.4
Solanum tuberosum	T	R	71.4
Solidago virgaurea	T	O	22.5
Sorghum dochna	T	O	39.2
Stachys byzantina	T	O	43.3
Stellaria media	T	O	59.7
Symphytum officinale	T	O	100.0
Tanacetum parthenium	T	O	32.5
Tanacetum vulgare	T	S	27.8
Taraxacum officinale	T	R	62.9
Teucrium chamaedrys	T	O	100.0
Teucrium chamaedrys	T	O	21.2
Thalpsi arvense	T	R	60.9
Thymus praecox subsp arcticus	T	R	24.6
Tragopogon porrifolium	T	R	33.7
Trifolium incarnatum	T	R	72.4
Trifolium pannonicum	T	R	72.4
Trifolium repens	T	R	33.7
Triticosecale spp.	T	R	100.0
Tropaeolum majus	T	O	31.5
Tropaeolum majus	T	O	100.0
Vaccinium angustifolium	T	S	42.1
Vaccinium angustifolium	T	S	30.9
Vaccinium macrocarpon	T	R	35.5
Vicia villosa	T	R	24.0
Vigna sesquipedalis	T	R	31.6
Vigna unguiculata	T	O	28.7
Vinca minor	T	O	26.9
Withania somnifera	T	O	30.9
Xanthium strumarium	T	R	20.1
Zea mays	T	O	32.2
Zea mays	T	O	

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	S	21.9
Achillea millefolium	A	O	63.0
Achillea millefolium	A	R	100.0
Aconitum napellus	A	R	71.0
Alcea rosea	A	R	67.9
Alchemilla mollis	A	O	64.4
Allium ascalonicum	A	R	20.9
Allium cepa	A	R	84.3
Allium grande	A	R	36.7
Allium porum	A	O	100.0
Allium porum	A	S	51.9
Allium porum	A	R	66.7
Allium sativum	A	R	100.0
Allium schoenoprasum	A	R	73.5
Allium Terosum	A	S	24.3
Allium Terosum	A	O	83.6
Allium Terosum	A	R	89.3
Aloe vera	A	R	69.7
Althaea officinalis	A	S	27.6
Althaea officinalis	A	R	64.7
Amaranthus gangeticus	A	S	29.4
Anethum graveolens	A	O	100.0
Apium graveolens	A	S	25.1
Apium graveolens	A	R	52.1
Aralia cordata	A	S	66.4
Aralia cordata	A	R	92.2
Aralia nudicaulis	A	O	29.4
Arctium minus	A	S	28.4
Amoracia rusticana	A	S	20.2
Amoracia rusticana	A	O	55.0
Anthenatherum elatius	A	S	40.2
Artemisia dracunculus	A	S	39.7
Asparagus officinalis	A	S	29.3
Atriplex hortensis	A	R	33.6
Avena sativa	A	R	37.2
Beta vulgaris	A	S	45.4
Beta vulgaris	A	R	95.9
Beta vulgaris spp. Maritima	A	R	100.0
Brassica chinensis	A	R	49.6
Brassica napus	A	O	28.5
Brassica Napus	A	S	52.4
Brassica Napus	A	R	82.4
Brassica nigra	A	O	29.2
Brassica oleracea	A	R	31.2
Brassica Oleracea	A	R	31.4
Brassica oleracea	A	R	64.0
Brassica oleracea	A	S	68.7

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Brassica oleracea	A	R	75.3
Brassica oleracea	A	O	100.0
Brassica rapa	A	S	27.6
Brassica rapa	A	R	33.4
Brassica rapa	A	O	57.6
Brassica rapa	A	R	58.1
Brassica rapa	A	R	84.5
Calamintha nepeta	A	O	65.0
Camellia sinensis	A	S	21.9
Camellia sinensis	A	R	26.5
Camellia sinensis	A	O	79.0
Canna edulis	A	R	45.5
Canna edulis	A	S	20.2
Capsella bursa-pastoris	A	S	35.5
capsicum annuum	A	S	61.5
Capsicum annuum	A	O	89.8
Capsicum annuum	A	R	100.0
Capsicum frutescens	A	S	66.6
Capsicum frutescens	A	R	100.0
Carthamus tinctorius	A	R	21.3
Carthamus tinctorius	A	R	21.5
Chaerophyllum bulbosum	A	R	57.2
Chelidonium majus	A	S	34.4
Chenopodium bonus - henricus	A	R	43.5
Chenopodium bonus - henricus	A	O	100.0
Chenopodium bonus-henricus	A	R	78.4
Chenopodium quinoa	A	O	92.0
Chrysanthemum coronarium	A	R	48.6
Chrysanthemum coronarium	A	O	49.7
Chrysanthemum coronarium	A	R	47.3
Chrysanthemum coronarium	A	R	26.7
Cicer arietinum	A	S	22.0
Cicer arietinum	A	O	23.6
Cichorium intybus	A	S	21.1
Cichorium intybus	A	R	100.0
Citrullus lanatus	A	S	65.5
Citrullus lanatus	A	R	96.3
Citrullus lanatus	A	O	100.0
Coix Lacryma-Jobi	A	O	32.2
Cornus canadensis	A	S	52.8
Cosmos sulphureus	A	R	72.5
Crataegus spp	A	O	100.0
Cryptotaenia canadensis	A	R	50.6
Cryptotaenia canadensis	A	O	51.3
Cucumis anguria	A	S	53.4
Cucumis Anguria	A	R	84.9
Cucumis melo	A	R	91.7

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Cucurbita Maxima	A	S	34.9
Cucurbita Maxima	A	R	41.7
Cucurbita moschata	A	R	36.8
Cucurbita moschata	A	S	37.4
Cucurbita pepo	A	S	48.1
Cucurbita pepo	A	R	85.7
Curcuma zedoaria	A	S	21.0
Curcuma zedoaria	A	R	32.1
Curcubita maxima	A	S	27.0
Cymbopogon citratus	A	R	34.5
Cymbopogon citratus	A	O	100.0
Cymbopogon martinii	A	S	47.4
Dactylis glomerata	A	S	20.6
Dactylis glomerata	A	O	75.0
Daucus carota	A	S	44.5
Daucus carota	A	R	70.5
Dipsacus salivus	A	O	40.4
Dirca palustris	A	S	27.2
Dolichos Lablab	A	S	54.2
Dryopteris filix-mas	A	R	76.3
Echinacea purpurea	A	R	42.9
Eleusine coracana	A	S	37.5
Eleusine coracana	A	O	100.0
Erigeron canadensis	A	O	45.7
Eruca vesicaria	A	R	80.2
Eschscholzia californica	A	S	42.4
Eschscholzia californica	A	O	75.0
Eschscholzia californica	A	R	88.8
Fagopyrum esculentum	A	O	100.0
Fagopyrum tartaricum	A	R	38.6
Fagopyrum tartaricum	A	S	40.3
Gallinsoga ciliata	A	R	54.0
Galium odoratum	A	O	34.3
Galium odoratum	A	O	100.0
Gaultheria hispidula	A	S	35.8
Gaultheria hispidula	A	R	100.0
Glaux maritima	A	R	46.5
Glycine max	A	S	27.0
Glycine Max	A	R	43.1
Glycine max	A	O	100.0
Guizotia abyssinica	A	S	29.8
Guizotia abyssinica	A	R	32.5
Hamamelis virginiana	A	R	75.7
Helianthus annuus	A	R	69.0
Helianthus Tuberosus	A	R	22.2
Helianthus tuberosus	A	R	69.7
Helianthus Tuberosus	A	O	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Hordeum hexastichon	A	R	22.3
Hordeum hexastichon	A	R	34.9
Hordeum hexastichon	A	O	86.9
Hordeum vulgare	A	O	74.8
Hordeum vulgare subsp. Vulgare	A	S	34.5
Hordeum vulgare subsp. Vulgare	A	O	74.2
Hyssopus officinalis	A	O	57.5
Inula helenium	A	S	26.8
Ipomoea Batatas	A	S	20.1
Lathyrus sativus	A	S	28.7
Lathyrus sativus	A	O	100.0
Lathyrus sylvestris	A	R	42.4
Lavandula latifolia	A	O	39.1
Lepidium sativum	A	O	20.1
Lepidium sativum	A	S	49.0
Levisticum officinale	A	S	23.0
Levisticum officinale	A	O	29.8
Linum usitatissimum	A	R	56.9
Lolium multiflorum	A	S	41.5
Lolium multiflorum	A	O	92.3
Lotus corniculatus	A	O	95.5
Lotus tetragonolobus	A	R	76.7
Lycopersicon esculentum	A	S	35.3
Lycopersicon esculentum	A	R	78.1
Lycopersicon esculentum	A	R	85.8
Lycopersicon pimpinellifolium	A	R	74.9
Malva moschata	A	S	21.5
Malva moschata	A	O	44.5
Malva verticillata	A	R	22.0
Matricaria recutita	A	S	40.9
Matricaria recutita	A	O	67.3
Melaleuca alternifolia	A	O	65.0
Melilotus albus	A	S	50.7
Melilotus albus	A	O	100.0
Melissa officinalis	A	O	42.4
Mentha pulegium	A	O	88.3
Mentha spicata	A	O	94.8
Mentha suaveolens	A	O	82.9
Nepeta cataria	A	O	100.0
Nicotiana rustica	A	S	24.0
Nicotiana rustica	A	R	100.0
Nicotiana tabacum	A	S	42.5
Nicotiana tabacum	A	R	61.1
Nigella sativa	A	R	81.7
Ocimum tenuiflorum	A	R	23.1
Oenothera biennis	A	R	28.6
Origanum majorana	A	O	52.9

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Origanum majorana	A	R	100.0
Origanum vulgare	A	O	66.8
Panax quinquefolius	A	S	31.8
Pastinaca sativa	A	S	27.7
Pastinaca sativa	A	R	33.8
Petasites japonicus	A	S	26.2
Petroselinum crispum	A	R	69.1
Phalaris canariensis	A	S	28.4
Phalaris canariensis	A	R	29.7
Phalaris canariensis	A	O	94.3
Phaseolus coccineus	A	S	30.8
Phaseolus coccineus	A	R	79.5
Phaseolus coccineus	A	O	80.9
Phaseolus mungo	A	R	59.8
Phaseolus vulgaris	A	S	47.3
Phaseolus Vulgaris	A	R	74.4
Phaseolus vulgaris	A	R	83.2
Phaseolus Vulgaris	A	O	100.0
Phlox paniculata	A	O	23.7
Phlox paniculata	A	R	81.7
Physalis alkekengi	A	R	23.5
Physalis ixocarpa	A	O	85.8
Physalis ixocarpa	A	R	91.5
Physalis Pruinosa	A	R	25.7
Physalis Pruinosa	A	O	83.5
Phytolacca decandra	A	O	31.5
Phytolacca decandra	A	S	38.5
Pimpinella anisum	A	S	100.0
Pimpinella anisum	A	R	100.0
Plantago coronopus	A	R	36.0
Plantago coronopus	A	R	38.4
Plantago coronopus	A	O	53.8
Plantago major	A	R	65.3
Plectranthus sp.	A	O	74.2
Poa compressa	A	S	37.3
Poa compressa	A	R	49.8
Poa compressa	A	O	100.0
Polygonum pensylvanicum	A	R	63.5
Polygonum pensylvanicum	A	O	72.9
Polygonum persicaria	A	S	27.5
Polygonum persicaria	A	O	43.0
Poterium sanguisorba	A	R	100.0
Poterium Sanguisorba	A	O	84.2
Pteridium aquilinum	A	O	45.1
Pteridium aquilinum	A	R	100.0
Pysalis ixocarpa	A	R	87.3
Raphanus raphanistrum	A	S	32.2

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Raphanus sativus	A	R	25.3
Raphanus sativus	A	S	47.5
Raphanus sativus	A	R	83.5
Raphanus sativus	A	R	84.7
Raphanus sativus	A	O	100.0
Rheum officinale	A	O	44.0
Ribes nigrum	A	O	100.0
Ribes nigrum	A	R	100.0
Ricinus communis	A	O	100.0
Rosa rugosa	A	R	25.2
Rosa rugosa	A	S	26.6
Rosa rugosa	A	O	83.2
Rosmarinus officinalis	A	R	68.2
Rubus idaeus	A	O	81.9
Rubus idaeus	A	R	73.4
Rumex Acetosa	A	S	24.2
Rumex Acetosa	A	R	85.5
Rumex Acetosa	A	O	100.0
Rumex crispus	A	O	46.7
Rumex crispus	A	R	100.0
Ruta graveolens	A	O	100.0
Saccharum officinarum	A	R	80.8
Salix purpurea	A	S	56.7
Salvia officinalis	A	S	24.1
Salvia officinalis	A	O	91.8
Salvia sclarea	A	O	99.7
Santolina chamaecyparissus	A	O	83.8
Satureja hortensis	A	O	79.1
Satureja hortensis	A	R	100.0
Satureja montana	A	R	60.4
Satureja montana	A	O	76.1
Scorzonera hispanica	A	S	22.1
Secale cereale	A	R	47.2
Secale cereale	A	O	67.2
Senecio vulgaris	A	S	23.2
Senecio vulgaris	A	R	76.6
Sesamum indicum	A	R	100.0
Sesamum indicum	A	S	100.0
Solanum dulcamara	A	R	54.5
Solanum melanocerasum	A	S	45.4
Solanum melanocerasum	A	R	85.2
Solanum melanocerasum	A	O	88.7
Solanum melongena	A	S	42.5
Solanum melongena	A	R	85.9
Sonchus oleraceus	A	R	25.6
Sorghum caffrorum	A	R	39.6
Sorghum dochna	A	S	30.0



Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Sorghum dochna</i>	A	R	48.0
<i>Sorghum dochna</i>	A	O	62.0
<i>Sorghum durra</i>	A	R	72.1
<i>Sorghum durra</i>	A	O	94.6
<i>Sorghum sudanense</i>	A	O	100.0
<i>Spinacia oleracea</i>	A	S	23.6
<i>Stachys affinis</i>	A	R	74.4
<i>Stachys byzantina</i>	A	R	48.4
<i>Stachys byzantina</i>	A	O	100.0
<i>Stellaria graminea</i>	A	S	20.8
<i>Stellaria graminea</i>	A	R	37.5
<i>Stellaria media</i>	A	R	49.0
<i>Stellaria media</i>	A	S	50.7
<i>Symphitum officinale</i>	A	R	44.2
<i>Tanacetum cinerarifolium</i>	A	R	100.0
<i>Tanacetum parthenium</i>	A	S	30.4
<i>Tanacetum vulgare</i>	A	S	28.6
<i>Tanacetum vulgare</i>	A	R	100.0
<i>Taraxacum officinale</i>	A	R	59.1
<i>Thymus praecox subsp. aureus</i>	A	R	43.5
<i>Thymus vulgaris</i>	A	S	30.1
<i>Thymus x citriodorus</i>	A	R	100.0
<i>Trichosanthes kirilowii</i>	A	S	29.2
<i>Trichosanthes kirilowii</i>	A	O	42.1
<i>Trigonella foenum-graecum</i>	A	O	53.4
<i>Triticosecal</i> spp.	A	R	44.8
<i>Triticum aestivum</i>	A	R	65.6
<i>Triticum durum</i>	A	O	53.9
<i>Triticum spelta</i>	A	R	26.4
<i>Triticum spelta</i>	A	S	36.7
<i>Triticum spelta</i>	A	O	51.9
<i>Tropaeolum majus</i>	A	R	25.8
<i>Urtica dioica</i>	A	O	22.9
<i>Urtica dioica</i>	A	S	30.6
<i>Vaccinium Corymbosum</i>	A	R	100.0
<i>Veratrum viride</i>	A	R	33.2
<i>Verbascum thapsus</i>	A	S	22.9
<i>Veronica beccabunga</i>	A	R	52.8
<i>Veronica officinalis</i>	A	R	84.2
<i>Vicia sativa</i>	A	R	100.0
<i>Vicia villosa</i>	A	S	32.9
<i>Vicia villosa</i>	A	R	100.0
<i>Vigna angularis</i>	A	R	54.0
<i>Vigna sesquipedalis</i>	A	S	48.3
<i>Vigna sesquipedalis</i>	A	R	73.0
<i>Vigna sesquipedalis</i>	A	O	96.6
<i>Vigna unguiculata</i>	A	R	70.7

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Vinca minor	A	S	22.1
Vinca minor	A	R	88.4
Vitis sp.	A	S	20.9
Vitis sp.	A	R	30.4
Xanthium sibiricum	A	S	39.2
Xanthium sibiricum	A	R	47.8
Xanthium sibiricum	A	O	70.1
Zea mays	A	R	100.0
Zea Mays	A	O	100.0
Abelmoschus esculentus	G	S	21.6
Abelmoschus esculentus	G	R	79.3
Achillea millefolium	G	O	62.7
Aconitum napellus	G	O	82.0
Acorus calamus	G	S	100.0
Ageratum conyzoides	G	S	49.3
Alcea rosea	G	R	64.4
Alchemilla mollis	G	S	21.5
Alchemilla mollis	G	R	30.2
Alchemilla mollis	G	O	55.7
Allium ampeloprasum	G	O	36.1
Allium ampeloprasum	G	R	52.8
Allium ascalonicum	G	O	68.9
Allium cepa	G	S	40.2
Allium cepa	G	R	68.4
Allium cepa	G	O	100.0
Allium grande	G	R	38.4
Allium sativum	G	S	29.5
Allium sativum	G	R	68.4
Allium sativum	G	O	100.0
Allium schoenoprasum	G	S	47.1
Allium schoenoprasum	G	R	61.7
Allium tuberosum	G	S	23.8
Allium tuberosum	G	O	54.5
Allium tuberosum	G	R	65.9
Aloe vera	G	R	53.6
Althaea officinalis	G	S	37.4
Althaea officinalis	G	S	42.4
Amaranthus caudatus	G	S	30.9
Amaranthus caudatus	G	O	56.7
Amaranthus gangeticus	G	S	23.1
Anethum graveolens	G	S	23.9
Angelica archangelica	G	S	22.0
Angelica archangelica	G	S	24.9
Apium graveolens	G	O	33.0
Apium graveolens	G	R	44.8
Apium graveolens	G	S	54.1

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Apium graveolens	G	R	84.1
Aralia nudicaulis	G	R	51.8
Arctium minus	G	S	25.4
Armoracia rusticana	G	O	52.1
Aronia melanocarpa	G	S	22.5
Aronia melanocarpa	G	R	82.3
Artemisia dracunculus	G	R	53.6
Artemisia dracunculus	G	R	58.8
Artemisia dracunculus	G	S	100.0
Artemisia dracunculus	G	O	100.0
Asclepias incarnata	G	S	26.9
Asparagus officinalis	G	S	24.0
Asparagus officinalis	G	R	65.9
Asparagus officinalis	G	O	85.0
Aster spp	G	O	48.4
Beckmannia eruciformis	G	O	24.8
Bellis perennis	G	O	52.6
Beta vulgaris	G	S	45.3
Beta vulgaris	G	R	100.0
Beta vulgaris spp. Maritima	G	R	100.0
Brassica cephalica	G	R	52.9
Brassica chinensis	G	R	41.9
Brassica juncea	G	R	22.8
Brassica Napus	G	S	22.9
Brassica oleracea	G	R	45.5
Brassica oleracea	G	R	47.1
Brassica oleracea	G	S	62.9
Brassica oleracea	G	R	77.9
Brassica oleracea	G	O	100.0
Brassica rapa	G	S	26.5
Brassica rapa	G	R	38.9
Brassica Rapa	G	R	53.6
Calamintha nepeta	G	S	20.4
Calamintha nepeta	G	O	78.0
Camellia sinensis	G	O	100.0
Campanula rapunculoides	G	R	60.6
Canna edulis	G	O	78.1
Capsella bursa-pastoris	G	S	30.7
Capsella bursa-pastoris	G	R	60.6
Capsicum annuum	G	S	70.8
Capsicum annuum	G	O	80.0
Capsicum annuum	G	R	100.0
Capsicum frutescens	G	S	63.2
Capsicum frutescens	G	R	100.0
Carthamus tinctorius	G	R	100.0
Centaurea solstitialis	G	S	46.4
Cerastium tomentosum	G	R	52.3

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Eschscholzia californica	G	S	47.9
Eschscholzia californica	G	O	75.9
Fagopyrum tartaricum	G	O	41.1
Filipendula rubra	G	R	38.5
Foeniculum vulgare	G	R	70.0
Foeniculum Vulgare	G	S	100.0
Galinsoga ciliata	G	S	34.6
Galinsoga ciliata	G	R	48.2
Gaultheria hispidula	G	R	60.5
Gaultheria hispidula	G	O	100.0
Gaultheria hispidula	G	S	100.0
Glaux maritima	G	R	59.3
Glycine max	G	R	21.1
Glycine max	G	S	24.4
Glycine max	G	O	28.1
Guizotia abyssinica	G	S	28.0
Guizotia abyssinica	G	R	38.8
Guizotia abyssinica	G	O	100.0
Hedeoma pulegioides	G	O	94.6
Helianthus annuus	G	S	35.5
Helianthus annuus	G	O	75.0
Helianthus annuus	G	R	79.9
Helianthus strumosus	G	O	100.0
Helianthus tuberosus	G	R	64.2
Helichrysum thianschanicum	G	O	61.1
Helleborus niger	G	R	48.0
Hordeum hexastichon	G	S	26.8
Hordeum vulgare	G	O	65.4
Hordeum vulgare subsp. Vulgare	G	O	75.8
Humulus lupulus	G	S	28.0
Hypericum henryi	G	R	20.2
Hypericum henryi	G	O	71.1
Hyssopus officinalis	G	O	100.0
Iberis amara	G	S	21.2
Inula helenium	G	S	24.3
Lactuca sativa	G	R	100.0
Lactuca seriola	G	R	69.3
Laportea canadensis	G	R	100.0
Lathyrus sylvestris	G	O	39.6
Lavandula angustifolia	G	O	70.0
Lavandula latifolia	G	S	22.7
Lepidium Sativum	G	R	30.6
Lepidium sativum	G	S	53.3
Levisticum officinale	G	O	80.7
Lolium multiflorum	G	O	34.5
Lotus corniculatus	G	S	32.9
Lotus corniculatus	G	O	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Lotus tetragonolobus</i>	G	R	79.9
<i>Lycopersicon esculentum</i>	G	S	28.2
<i>Lycopersicon esculentum</i>	G	R	75.4
<i>Lycopersicon pimpinellifolium</i>	G	R	81.4
<i>Malus hupehensis</i>	G	R	32.5
<i>Malus hupehensis</i>	G	S	41.2
<i>Malva moschata</i>	G	O	47.1
<i>Malva sylvestris</i>	G	S	23.1
<i>Malva verticillata</i>	G	R	39.9
<i>Matricaria recutita</i>	G	O	30.0
<i>Matricaria recutita</i>	G	S	71.3
<i>Melaleuca alternifolia</i>	G	O	58.3
<i>Melilotus alba</i>	G	S	41.1
<i>Melilotus albus</i>	G	O	68.8
<i>Melilotus albus</i>	G	R	100.0
<i>Melissa officinalis</i>	G	O	47.8
<i>Mentha arvensis</i>	G	R	33.9
<i>Mentha arvensis</i>	G	O	63.3
<i>Mentha piperita</i>	G	S	32.3
<i>Mentha piperita</i>	G	O	85.9
<i>Mentha piperita</i>	G	R	100.0
<i>Mentha spicata</i>	G	S	28.9
<i>Mentha spicata</i>	G	R	37.5
<i>Mentha suaveolens</i>	G	R	25.6
<i>Mentha suaveolens</i>	G	O	70.3
<i>Momordica charantia</i>	G	R	52.9
<i>Monarda didyma</i>	G	S	22.0
<i>Monarda didyma</i>	G	O	100.0
<i>Monarda fistulosa</i>	G	O	26.0
<i>Nepeta cataria</i>	G	S	23.4
<i>Nicotiana tabacum</i>	G	S	45.2
<i>Nigella arvensis</i>	G	R	94.7
<i>Ocimum basilicum</i>	G	S	23.0
<i>Ocimum basilicum</i>	G	O	100.0
<i>Ocimum tenuiflorum</i>	G	R	45.3
<i>Oenothera biennis</i>	G	R	54.3
<i>Origanum majorana</i>	G	O	100.0
<i>Origanum majorana</i>	G	R	100.0
<i>Origanum vulgare</i>	G	R	93.3
<i>Origanum vulgare</i>	G	O	93.5
<i>Origanum vulgare</i>	G	S	97.4
<i>Oxalis Deppei</i>	G	S	28.7
<i>Oxalis Deppei</i>	G	R	87.2
<i>Oxalis Deppei</i>	G	O	100.0
<i>Oxyria digyna</i>	G	R	54.5
<i>Panicum miliaceum</i>	G	O	71.1
<i>Panicum miliaceum</i>	G	R	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Panicum miliaceum	G	S	100.0
Passiflora caerulea	G	S	26.3
Passiflora caerulea	G	R	72.1
Pastinaca sativa	G	S	24.3
Pastinaca sativa	G	R	90.2
Petroselinum crispum	G	R	87.6
Petroselinum crispum	G	O	100.0
Phalaris canariensis	G	R	100.0
Phalaris canariensis	G	O	100.0
Phaseolus acutifolius	G	R	79.6
Phaseolus coccineus	G	S	28.3
Phaseolus coccineus	G	R	80.4
Phaseolus mungo	G	R	37.2
Phaseolus vulgaris	G	R	54.3
Phaseolus vulgaris	G	S	59.0
Phaseolus vulgaris	G	O	73.7
Phaseolus vulgaris	G	R	100.0
Phlox paniculata	G	R	37.7
Phlox paniculata	G	O	77.0
Phlox paniculata	G	R	80.8
Physalis ixocarpa	G	S	30.5
Physalis ixocarpa	G	R	78.3
Physalis ixocarpa	G	R	80.9
Physalis pruinosa	G	O	63.2
Phytolacca americana	G	S	36.1
Phytolacca americana	G	O	100.0
Pimpinella anisum	G	S	26.1
Pimpinella anisum	G	R	30.0
Pisum sativum	G	S	28.4
Plantago coronopus	G	R	27.8
Plantago coronopus	G	O	51.1
Plantago coronopus	G	R	67.5
Plantago major	G	S	30.3
Plantago major	G	O	64.6
Poa compressa	G	O	63.0
Poa compressa	G	S	67.4
Poa compressa	G	R	89.0
Poa pratensis	G	S	28.2
Polygonum aviculare	G	R	100.0
Polygonum pensylvanicum	G	S	27.7
Polygonum pensylvanicum	G	O	54.1
Polygonum persicaria	G	S	32.0
Polygonum persicaria	G	O	35.7
Polygonum persicaria	G	R	100.0
Portulaca oleracea	G	R	51.5
Poterium sanguisorba	G	O	89.9
Poterium sanguisorba	G	R	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Poterium sanguisorba	G	S	23.7
Prunella vulgaris	G	S	26.7
Prunus cerasifera	G	R	95.3
Raphanus Raphanistrum	G	R	41.7
Raphanus Raphanistrum	G	S	43.5
Raphanus sativus	G	R	41.0
Raphanus sativus	G	S	44.6
Raphanus sativus	G	R	50.6
Raphanus sativus	G	R	66.1
Raphanus sativus	G	O	100.0
Reseda odorata	G	O	58.3
Rheum officinale	G	O	30.7
Ribes nigrum	G	O	54.3
Ribes nigrum	G	R	63.8
Ribes Sylvestre	G	R	100.0
Ricinus communis	G	R	41.5
Ricinus communis	G	O	100.0
Rosmarinus officinalis	G	R	90.0
Rubus idaeus	G	S	37.1
Rubus idaeus	G	R	26.8
Rubus occidentalis	G	R	35.1
Rumex crispus	G	R	30.3
Rumex crispus	G	S	100.0
Rumex patientia	G	R	41.0
Rumex patientia	G	S	41.9
Ruta graveolens	G	S	47.9
Ruta graveolens	G	R	82.1
Saccharum officinarum	G	R	100.0
Salvia elegans	G	O	100.0
Salvia officinalis	G	S	35.3
Salvia officinalis	G	O	100.0
Salvia officinalis	G	R	100.0
Sambucus ebulus	G	R	53.9
Santolina chamaecyparissus	G	S	38.4
Santolina chamaecyparissus	G	O	69.5
Santolina chamaecyparissus	G	R	100.0
Saponaria officinalis	G	S	29.8
Satureja hortensis	G	O	97.4
Satureja hortensis	G	R	100.0
Satureja montana	G	O	59.2
Satureja repandra	G	S	35.3
Satureja repandra	G	O	66.2
Scorzonera hispanica	G	S	24.5
Scrophularia nodosa	G	S	24.5
Scrophularia nodosa	G	O	30.0
Scrophularia nodosa	G	R	55.6
Scutellaria lateriflora	G	S	20.3

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Scutellaria lateriflora	G	R	83.1
Secale cereale	G	O	51.1
Senecio vulgaris	G	R	42.5
Sesamum indicum	G	S	34.3
Sesamum indicum	G	R	44.5
Silene vulgaris	G	S	34.1
Sium sisarum	G	O	100.0
Solanum melanocerasum	G	S	40.8
Solanum melanocerasum	G	R	85.4
solanum melongena	G	S	58.2
solanum melongena	G	O	83.0
solanum melongena	G	R	85.6
Solanum tuberosum	G	O	40.2
Sonchus oleraceus	G	R	41.1
Sorghum dochna	G	S	25.0
Sorghum dochna	G	O	64.3
Sorghum dochna	G	R	100.0
sorghum durra	G	R	60.1
Sorghum durra	G	O	100.0
Sorghum sudanense	G	O	98.0
Spinacia oleracea	G	S	24.9
Spinacia oleracea	G	O	100.0
Stachys byzantina	G	R	78.8
Stellaria graminea	G	S	29.3
Stellaria media	G	S	33.4
Stellaria media	G	R	45.4
Symphytum officinale	G	O	57.5
Tanacetum cinerariifolium	G	R	100.0
Tanacetum parthenium	G	R	28.2
Tanacetum vulgare	G	S	25.2
Tanacetum vulgare	G	R	39.3
Tanacetum vulgare	G	O	81.2
Taraxacum officinale	G	R	51.1
Thymus fragrantissimus	G	S	29.9
Thymus fragrantissimus	G	O	55.3
Thymus praecox subsp arcticus	G	S	27.7
Thymus serpyllum	G	R	74.9
Thymus vulgaris	G	S	23.3
Thymus vulgaris	G	R	86.4
Thymus x citriodorus	G	R	97.6
Tragopogon pterisifolius	G	R	78.2
Trichosanthes kirilowii	G	O	87.7
Trigonella foenumgraecum	G	S	31.0
Trigonella foenumgraecum	G	O	84.0
Triticosecale spp	G	S	26.5
Triticosecale spp	G	O	73.5
Triticum aestivum	G	R	62.4



Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Triticum durum</i>	G	O	51.9
<i>Triticum spelta</i>	G	S	24.5
<i>Triticum spelta</i>	G	O	32.9
<i>Triticum turgidum</i>	G	O	25.1
<i>Tropaeolum majus</i>	G	S	21.3
<i>Tropaeolum majus</i>	G	R	45.6
<i>Urtica dioica</i>	G	S	21.3
<i>Urtica dioica</i>	G	O	100.0
<i>Valerianella locusta</i>	G	O	32.2
<i>Veratrum viride</i>	G	R	77.7
<i>Verbascum thapsus</i>	G	S	34.0
<i>Veronica beccabunga</i>	G	R	44.1
<i>Veronica officinalis</i>	G	S	38.8
<i>Veronica officinalis</i>	G	R	87.6
<i>Viburnum trilobum</i>	G	O	62.6
<i>Vicia faba</i>	G	S	22.2
<i>Vicia sativa</i>	G	O	74.8
<i>Vicia sativa</i>	G	R	100.0
<i>Vicia villosa</i>	G	R	100.0
<i>Vigna angularis</i>	G	R	65.2
<i>Vigna sesquipedalis</i>	G	S	35.1
<i>Vigna sesquipedalis</i>	G	R	73.8
<i>Vigna sesquipedalis</i>	G	O	100.0
<i>Vigna unguiculata</i>	G	S	65.9
<i>Vigna unguiculata</i>	G	R	84.5
<i>Vinca minor</i>	G	S	22.1
<i>Vitis sp.</i>	G	R	40.1
<i>Vitis sp.</i>	G	O	74.7
<i>Withania somnifera</i>	G	S	37.3
<i>Withania somnifera</i>	G	O	91.0
<i>Xanthium sibiricum</i>	G	S	38.4
<i>Xanthium sibiricum</i>	G	O	100.0
<i>Xanthium strumarium</i>	G	S	37.7
<i>Xanthium strumarium</i>	G	O	39.6
<i>Xanthium strumarium</i>	G	R	40.0
<i>Zea mays</i>	G	S	43.3
<i>Zea mays</i>	G	O	64.4
<i>Zea mays</i>	G	R	68.3
<i>Abies lasiocarpa</i>	T	S	20.2
<i>Abies lasiocarpa</i>	T	R	59.1
<i>Achillea millefolium</i>	T	O	84.7
<i>Aconitum napellus</i>	T	O	22.0
<i>Aconitum napellus</i>	T	R	100.0
<i>Adiantum pedatum</i>	T	R	100.0
<i>Agaricus bisporus</i>	T	R	52.1
<i>Agaricus bisporus</i>	T	R	65.6

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Ageratum conyzoides</i>	T	S	26.7
<i>Agropyron repens</i>	T	S	30.2
<i>Agrostis Stolonifera</i>	T	O	100.0
<i>Alcea rosea</i>	T	R	63.7
<i>Alchemilla mollis</i>	T	R	28.6
<i>Allium ampeloprasum</i>	T	R	55.9
<i>Allium ampeloprasum</i>	T	O	60.4
<i>Allium ascalonicum</i>	T	S	20.4
<i>Allium ascalonicum</i>	T	O	73.4
<i>Allium cepa</i>	T	S	33.8
<i>Allium cepa</i>	T	S	35.6
<i>Allium cepa</i>	T	R	48.0
<i>Allium cepa</i>	T	R	78.6
<i>Allium grande</i>	T	R	32.4
<i>Allium schoenoprasum</i>	T	R	67.7
<i>Allium tuberosum</i>	T	S	38.8
<i>Allium tuberosum</i>	T	O	82.5
<i>Allium tuberosum</i>	T	R	85.2
<i>Aloe vera</i>	T	R	74.6
<i>Althaea officinalis</i>	T	S	37.7
<i>Althaea officinalis</i>	T	O	55.3
<i>Althaea officinalis</i>	T	R	72.3
<i>Amaranthus caudatus</i>	T	O	53.5
<i>Amaranthus gangeticus</i>	T	S	28.1
<i>Ananas comosus</i>	T	R	37.9
<i>Ananas comosus</i>	T	O	100.0
<i>angelica archangelica</i>	T	R	41.3
<i>Anthemis nobilis</i>	T	O	100.0
<i>Anthemis nobilis</i>	T	R	100.0
<i>Anthriscus cerefolium</i>	T	S	21.9
<i>Anthriscus cerefolium</i>	T	O	67.1
<i>Aplum graveolens</i>	T	R	35.5
<i>Aplum graveolens</i>	T	R	52.1
<i>Aralia cordata</i>	T	R	100.0
<i>Aralia nudicaulis</i>	T	R	31.2
<i>Arcium minus</i>	T	S	31.3
<i>Arcium minus</i>	T	O	73.7
<i>Amoracia rusticana</i>	T	O	49.9
<i>Arrhenatherum elatius</i>	T	O	100.0
<i>Artemisia dracuncul</i>	T	S	100.0
<i>Asclepias incarnata</i>	T	S	32.3
<i>Asparagus officinalis</i>	T	S	48.2
<i>Atriplex hortensis</i>	T	R	28.4
<i>Avena sativa</i>	T	R	31.3
<i>Avena sativa</i>	T	O	70.6
<i>Avena sativa</i>	T	R	100.0
<i>Averrhoa carambola</i>	T	R	44.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Bellis perennis</i>	T	R	82.0
<i>Beta vulgaris</i>	T	S	33.7
<i>Beta vulgaris</i>	T	R	100.0
<i>Betula glandulosa</i>	T	O	53.5
<i>Boletus edulis</i>	T	S	21.8
<i>Borago officinalis</i>	T	S	42.3
<i>Borago officinalis</i>	T	R	78.5
<i>Brassica hirta</i>	T	R	53.1
<i>Brassica hirta</i>	T	O	68.9
<i>Brassica Napus</i>	T	S	45.1
<i>Brassica Napus</i>	T	R	82.9
<i>Brassica oleracea</i>	T	R	38.8
<i>Brassica oleracea</i>	T	R	49.7
<i>Brassica oleracea</i>	T	O	75.5
<i>Brassica oleracea</i>	T	R	77.0
<i>Brassica oleracea</i>	T	S	77.2
<i>Brassica rapa</i>	T	R	25.4
<i>Brassica rapa</i>	T	O	37.9
<i>Brassica rapa</i>	T	S	47.7
<i>Brassica rapa</i>	T	R	64.7
<i>Brassica rapa</i>	T	R	81.8
<i>Calamintha nepeta</i>	T	O	57.6
<i>Calendula officinalis</i>	T	S	32.6
<i>Camellia sinensis</i>	T	S	21.0
<i>Camellia sinensis</i>	T	R	43.8
<i>Camellia sinensis</i>	T	O	68.2
<i>Canna edulis</i>	T	O	100.0
<i>Cantharellus cibarius</i>	T	S	26.0
<i>Capsicum annuum</i>	T	S	54.6
<i>Capsicum annuum</i>	T	R	100.0
<i>Capsicum frutescens</i>	T	S	60.9
<i>Capsicum frutescens</i>	T	R	100.0
<i>Carex morrowii</i>	T	R	24.4
<i>Carica papaya</i>	T	S	20.8
<i>Carthamus tinctorius</i>	T	R	39.6
<i>Carya cordiformis</i>	T	R	100.0
<i>Cerastium tomentosum</i>	T	R	54.8
<i>Chaerophyllum bulbosum</i>	T	S	42.2
<i>Chaerophyllum bulbosum</i>	T	R	74.3
<i>Chelidonium majus</i>	T	S	20.3
<i>Chenopodium quinoa</i>	T	O	76.0
<i>Chrysanthemum coronarium</i>	T	S	30.6
<i>Chrysanthemum parthenium</i>	T	R	57.2
<i>chrysanthemum coronarium</i>	T	R	58.5
<i>Chrysanthemum coronarium</i>	T	R	81.6
<i>Cicer arietinum</i>	T	O	32.2
<i>Cichorium endivia subsp endivia</i>	T	R	27.1

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Cichorium endivia subsp. Endivia	T	S	26.9
Cichorium endivia subsp. Endivia	T	O	64.5
Cichorium Intybus	T	S	22.7
Cichorium Intybus	T	R	53.5
Cimicifuga racemosa	T	S	41.1
Cimicifuga racemosa	T	R	68.4
Circium arvense	T	S	42.5
Circium arvense	T	R	64.5
Citrullus lanatus	T	S	72.4
Citrullus lanatus	T	O	92.2
Citrullus lanatus	T	R	100.0
Citrus limettoides	T	O	77.1
Citrus limon	T	R	43.6
Citrus paradisi	T	S	21.8
Citrus paradisi	T	R	90.9
Citrus sinensis	T	R	46.7
Colocasia sp	T	R	43.4
Colocasia sp	T	O	84.3
Corchorus olitorius	T	R	22.7
Coriandrum sativum	T	S	20.4
Cornus canadensis	T	S	66.0
Cosmos sulphureus	T	R	47.1
Crataegus submollis	T	S	21.2
Crataegus submollis	T	O	94.3
Cucumis anguria	T	S	49.4
Cucumis anguria	T	R	84.1
Cucumis melo	T	S	56.6
Cucumis melo	T	R	92.4
Cucumis melo	T	O	100.0
Cucumis meluiferus	T	S	29.5
Cucumis sativus	T	S	28.3
Cucurbita maxima	T	S	26.7
Cucurbita maxima	T	O	34.7
Cucurbita maxima	T	R	62.1
Cucurbita moschata	T	R	30.7
Cucurbita moschata	T	S	33.4
Cucurbita moschata	T	S	48.3
Cucurbita moschata	T	R	98.8
Cucurbita moschata	T	O	100.0
Cucurbita pepo	T	S	45.8
Cucurbita pepo	T	R	80.2
Erysimum perofskianum	T	S	28.2
Erysimum perofskianum	T	R	85.2
Eschscholzia californica	T	S	49.9
Eschscholzia californica	T	O	74.5
Fagopyrum esculentum	T	O	62.9
Fagopyrum tartaricum	T	S	25.6

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Fagopyrum tartaricum	T	R	68.4
Fagopyrum tartaricum	T	O	100.0
Festuca rubra	T	O	51.6
Festuca rubra	T	S	56.6
Festuca rubra	T	R	71.7
Foeniculum vulgare	T	S	36.5
Foeniculum vulgare	T	R	41.4
Foeniculum vulgare	T	O	100.0
Fortunella spp	T	R	53.9
Fragaria xananassa	T	R	28.1
Galinsoga ciliata	T	S	43.2
Galinsoga ciliata	T	R	73.3
Galium odoratum	T	S	42.0
Galium odoratum	T	O	94.2
Glaux Maritima	T	R	24.8
Glycine max	T	R	37.2
Glycine max	T	O	100.0
Glycine max	T	R	100.0
Glycine max	T	S	100.0
Gossypium herbaceum	T	R	48.7
Guizotia abyssinica	T	S	26.8
Guizotia abyssinica	T	R	100.0
Hedeoma pulegioides	T	R	20.3
Hedeoma pulegioides	T	O	72.7
Helianthus annuus	T	R	56.1
Helianthus strumosus	T	O	100.0
Helianthus tuberosus	T	S	25.3
Helianthus tuberosus	T	R	28.1
Helianthus tuberosus	T	O	78.6
Helianthus tuberosus	T	R	91.5
Helianthus tuberosus	T	R	83.4
Helichrysum angustifolium	T	S	88.3
Helichrysum angustifolium	T	O	26.0
Helichrysum thianschanicum	T	R	100.0
Heliotropium arborescens	T	R	23.0
Helleborus niger	T	R	37.9
Hibiscus cannabinus	T	O	75.9
Hordeum vulgare	T	S	20.5
Hordeum vulgare supsp vulgare	T	O	62.3
Hordeum vulgare supsp vulgare	T	S	44.7
Humulus lupulus	T	O	70.6
Humulus lupulus	T	O	76.8
Hypericum henryi	T	R	99.8
Hypericum henryi	T	R	38.8
Hypericum perforatum	T	O	100.0
Hyssopus officinalis	T	O	100.0
Iberis amara	T	S	100.0
Juniperus communis	T	S	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Kochia scoparia	T	S	25.2
Koeleria glauca	T	S	23.1
Lactuca sativa	T	R	70.5
Lactuca serriola	T	R	34.1
Laportea canadensis	T	R	61.3
Lathyrus sylvestris	T	R	48.6
Laurus nobilis	T	O	73.8
Lavandula angustifolia	T	R	35.0
Lavandula angustifolia	T	O	100.0
Lavandula latifolia	T	O	77.1
Lepidium sativum	T	S	35.2
Lepidium sativum	T	R	48.1
Lepidium sativum	T	O	72.9
Levisticum officinale	T	S	38.7
Levisticum officinale	T	O	60.3
Linum usitatissimum	T	R	24.7
Lolium multiflorum	T	S	39.8
Lolium multiflorum	T	O	74.1
Lonicera ramosissima	T	S	34.4
Lonicera ramosissima	T	O	80.5
Lonicera syringantha	T	R	58.4
Lotus corniculatus	T	S	38.0
Lotus corniculatus	T	O	100.0
Lotus tetragonolobus	T	R	76.1
Lunaria annua	T	R	47.4
Lycopersicon esculentum	T	R	69.7
Lycopersicon pimpinellifolium	T	R	58.7
Malus hupehensis	T	R	53.1
Malus hupehensis	T	S	100.0
Malus sp.	T	R	72.6
Malva moschata	T	O	96.7
Malva verticillata	T	R	35.8
Manihot esculenta	T	R	53.7
Melaleuca alternifolia	T	S	21.5
Melaleuca alternifolia	T	O	78.7
Mellilotus albus	T	R	79.7
Mellilotus officinalis	T	S	34.6
Mellilotus officinalis	T	R	100.0
Melissa officinalis	T	O	100.0
Mentha piperita	T	S	24.5
Mentha pulegium	T	O	100.0
Mentha suaveolens	T	O	20.9
Miscanthus sinensis Andress	T	S	69.1
Momordica charantia	T	R	54.9
Monarda didyma	T	S	31.3
Monarda fistulosa	T	S	21.3
Monarda fistulosa	T	O	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Montia perfoliata	T	R	67.2
Musa paradisiaca	T	R	47.3
nasturtium officinale	T	S	55.7
Nepeta cataria	T	S	20.7
Nepeta cataria	T	S	69.0
Nepeta cataria	T	O	100.0
Nicotiana rustica	T	S	52.8
Nicotiana rustica	T	R	88.1
Nicotiana tabacum	T	S	50.3
Nicotiana tabacum	T	R	91.5
Nigella sativa	T	R	34.2
Nigella sativa	T	R	90.3
Nigella sativa	T	R	100.0
Ocimum Basilicum	T	S	21.6
Ocimum Basilicum	T	O	100.0
Ocimum tenuiflorum	T	R	44.5
Oenothera biennis	T	R	48.2
Onobrychis viciifolia	T	S	34.4
Onobrychis viciifolia	T	O	35.6
Opuntia sp.	T	S	23.5
Origanum vulgare	T	S	20.7
Origanum vulgare	T	R	78.7
Origanum vulgare	T	O	100.0
Oryza sativa	T	R	60.8
Oxalis Deppei	T	S	22.2
Oxalis Deppei	T	R	81.4
Passiflora caerulea	T	S	36.9
Passiflora caerulea	T	R	87.0
Passiflora spp	T	R	54.6
Pastinaca sativa	T	S	24.8
Pastinaca sativa	T	R	74.7
Perilla frutescens	T	R	100.0
Perroselinum crispum	T	R	85.2
Perroselinum crispum	T	O	100.0
Persea americana	T	R	43.1
Petasites Japonicus	T	S	21.9
Petroselinum crispum	T	R	52.8
Peucedanum oreaselinum	T	R	41.9
Phalaris canariensis	T	R	41.1
Phalaris canariensis	T	O	100.0
Phaseolus acutifolius	T	R	88.2
Phaseolus coccineus	T	S	22.2
Phaseolus coccineus	T	R	36.4
Phaseolus coccineus	T	R	88.7
Phaseolus coccineus	T	O	100.0
Phaseolus mungo	T	S	43.0
Phaseolus vulgaris	T	S	62.9

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Phaseolus vulgaris	T	R	71.9
Phaseolus vulgaris	T	R	73.0
Phaseolus vulgaris	T	O	100.0
Phlox paniculata	T	R	23.1
Phlox paniculata	T	R	92.8
Physalis alkekengi	T	R	39.5
Physalis ixocarpa	T	R	36.7
Physalis ixocarpa	T	R	75.9
Physalis pruinosa	T	R	65.6
Physalis pruinosa	T	R	71.0
Physalis pruinosa	T	O	100.0
Physalis pruinosa	T	O	100.0
Phytolacca decandra	T	S	39.3
Phytolacca decandra	T	O	42.0
Pimpinella anisum	T	S	27.9
Pimpinella anisum	T	R	35.8
Pimpinella anisum	T	O	49.9
Pimpinella anisum	T	R	55.5
Pisum sativum	T	S	22.3
Plantago coronopus	T	R	35.2
Plantago coronopus	T	R	46.0
Plantago coronopus	T	O	73.5
Plantago major	T	S	22.3
Plectranthus sp.	T	S	59.2
Pleurotus spp	T	R	26.6
Poa compressa	T	S	33.4
Poa compressa	T	R	75.7
Poa compressa	T	O	100.0
Poa pratensis	T	S	25.4
Polygonum pensylvanicum	T	O	66.8
Polygonum pensylvanicum	T	R	73.3
Polygonum persicaria	T	S	27.1
Polygonum persicaria	T	O	50.8
Populus incrassata	T	O	74.3
Populus incrassata	T	S	100.0
Prunus armeniaca	T	R	55.0
Prunus cerasus	T	O	100.0
Prunus persica	T	S	26.0
Prunus persica	T	R	46.2
Psoralea corylifolia	T	S	47.4
Pteridium aquilinum	T	R	100.0
Pyrus communis	T	R	42.9
Raphanus raphanistrum	T	S	24.4
Raphanus raphanistrum	T	R	56.9
Raphanus raphanistrum	T	O	62.1
Raphanus raphanistrum	T	O	100.0
Raphanus sativus	T	R	48.9



Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Raphanus sativus	T	S	59.8
Raphanus sativus	T	R	81.6
Reseda odorata	T	O	71.3
Rhamnus frangula	T	O	44.6
Rhamnus frangula	T	R	74.4
Rheum officinale	T	O	73.9
Rheum officinale	T	S	100.0
Ricinus communis	T	O	100.0
Rosmarinus officinalis	T	O	100.0
Rosmarinus officinalis	T	R	100.0
Rubus idaeus	T	R	78.1
Rumex acetosella	T	R	42.2
Rumex crispus	T	O	73.1
Rumex patientia	T	S	52.0
Ruta graveolens	T	S	34.7
Ruta graveolens	T	O	100.0
Saccharum officinarum	T	S	59.6
Saccharum officinarum	T	R	66.1
Salvia elegans	T	S	36.3
Salvia elegans	T	O	44.3
Salvia officinalis	T	S	28.2
Salvia officinalis	T	O	100.0
Salvia sclarea	T	R	38.6
Sambucus canadensis	T	S	36.3
Sambucus canadensis	T	R	64.6
Sambucus canadensis	T	O	100.0
Sanguisorba minor	T	O	73.1
Sanguisorba minor	T	R	100.0
Santolina chamaecyparissus	T	O	27.7
Santolina chamaecyparissus	T	R	100.0
Saponaria officinalis	T	R	100.0
Satureja hortensis	T	O	62.2
Satureja hortensis	T	R	100.0
Satureja montana	T	S	34.7
Satureja montana	T	O	36.3
Satureja montana	T	R	100.0
Satureja repandra	T	O	47.0
Satureja repandra	T	S	47.6
Satureja repandra	T	R	84.6
Scotymus hispanicus	T	R	35.8
Scorzonera hispanica	T	R	99.4
Scrophularia nodosa	T	S	29.1
Scrophularia nodosa	T	R	90.1
Scrophularia nodosa	T	O	100.0
Scutellaria lateriflora	T	S	30.9
Scutellaria lateriflora	T	R	63.9
Secale cereale	T	O	100.0

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
Senecio vulgaris	T	S	24.7
Senecio vulgaris	T	R	32.2
Sesamum indicum	T	R	100.0
Silene vulgaris	T	S	25.6
Slum sisarum	T	O	81.4
Slum sisarum	T	O	100.0
Solanum melancerasum	T	S	28.0
Solanum melancerasum	T	R	78.8
Solanum melancerasum	T	R	99.8
Solanum melongena	T	S	70.5
Sorghum cafrorum	T	S	28.1
Sorghum dochna	T	R	40.8
Sorghum dochna	T	O	100.0
Sorghum durra	T	R	29.7
Sorghum durra	T	O	78.9
Sorghum sudanense	T	R	74.6
Sorghum sudanense	T	O	100.0
Spinacia oleracea	T	S	28.5
Spinacia oleracea	T	O	62.7
Stachys byzantina	T	R	68.9
Stachys byzantina	T	O	100.0
Stellaria media	T	S	21.4
Stellaria media	T	R	87.1
Stipa capillata	T	R	37.5
Symphytum officinale	T	O	58.5
Tanacetum cinerariifolium	T	O	100.0
Tanacetum cinerariifolium	T	R	100.0
Tanacetum parthenium	T	R	100.0
Tanacetum vulgare	T	R	20.8
Taraxacum officinale	T	R	76.3
Teucrium chamaedrys	T	O	75.6
Thalpsi arvense	T	O	64.1
Thymus fragrantissimus	T	S	21.4
Thymus praecox subsp arcticus	T	S	36.4
Thymus pseudolanuginosus	T	S	21.1
Thymus pseudolanuginosus	T	O	75.4
Thymus serpyllum	T	O	64.2
Thymus vulgaris	T	R	71.5
Thymus X citriodorus	T	S	27.6
Tragopogon porrifolium	T	S	44.8
Tragopogon porrifolius	T	O	39.1
Tragopogon porrifolius	T	R	57.9
Tragopogon.sp.	T	R	20.0
Trifolium repens	T	R	79.7
Trigonella foenum graecum	T	O	28.4
Trigonella foenum graecum	T	S	34.8
Triticosecale spp	T	S	28.6

Table 2  
MMP-2

Nom latin	Stress	Extrait	Inhibition (%)
<i>Triticosecale</i> spp	T	O	100.0
<i>Triticum aestivum</i>	T	R	32.9
<i>Triticum aestivum</i>	T	O	67.7
<i>Triticum durum</i>	T	O	47.7
<i>Triticum spelta</i>	T	O	37.1
<i>Triticum turgidum</i>	T	O	41.2
<i>Tropaeolum majus</i>	T	S	42.7
<i>Tropaeolum majus</i>	T	R	77.6
<i>Tsuga diversifolia</i>	T	R	53.4
<i>Typha latifolia</i>	T	S	29.2
<i>Urtica dioica</i>	T	S	29.5
<i>Vaccinium angustifolium</i>	T	R	59.4
<i>Vaccinium angustifolium</i>	T	R	100.0
<i>Vaccinium macrocarpon</i>	T	S	51.1
<i>Vaccinium macrocarpon</i>	T	O	64.7
<i>Valerianella locusta</i>	T	S	22.7
<i>Valerianella locusta</i>	T	O	24.8
<i>Veronica beccabunga</i>	T	R	33.3
<i>Veronica officinalis</i>	T	R	59.2
<i>Veronica officinalis</i>	T	O	100.0
<i>Viburnum trilobum</i>	T	O	71.2
<i>Vicia faba</i>	T	S	25.5
<i>Vicia faba</i>	T	R	27.0
<i>Vicia sativa</i>	T	O	56.6
<i>Vicia villosa</i>	T	R	100.0
<i>Vigna angularis</i>	T	R	49.2
<i>Vigna sesquipedalis</i>	T	R	77.4
<i>Vigna sesquipedalis</i>	T	O	100.0
<i>Vigna unguiculata</i>	T	S	27.2
<i>Vigna unguiculata</i>	T	R	59.0
<i>Vigna unguiculata</i>	T	R	39.2
<i>Vinca minor</i>	T	R	31.9
<i>Vitis</i> sp.	T	R	36.3
<i>Vitis</i> sp.	T	S	72.2
<i>Vitis</i> sp.	T	O	32.9
<i>Weigela coraeensis</i>	T	S	61.5
<i>Weigela coraeensis</i>	T	R	38.1
<i>Withania somnifera</i>	T	S	83.3
<i>Withania somnifera</i>	T	O	32.1
<i>Xanthium sibiricum</i>	T	S	33.2
<i>Xanthium sibiricum</i>	T	R	62.4
<i>Xanthium sibiricum</i>	T	O	47.2
<i>Xanthium strumarium</i>	T	S	74.3
<i>Xanthium strumarium</i>	T	O	55.7
<i>Zea mays</i>	T	R	100.0
<i>Zea mays</i>	T	O	79.0
<i>Zingiber officinale</i>	T	R	

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	21.4
Allium Tuberosum	A	S	32.5
Anethum graveolens	A	S	26.0
Anthemis nobilis	A	R	20.3
Anthemis tinctoria	A	R	58.0
Apium graveolens	A	R	34.1
Arctium minus	A	R	53.9
Arctium minus	A	O	100.0
Arctostaphylos uva-ursi	A	S	58.6
Aronia melanocarpa	A	R	32.2
Artemisia Absinthium	A	O	100.0
Artemisia dracunculus	A	R	23.4
Artemisia dracunculus	A	S	63.0
Aster sp	A	O	42.4
Atropa belladonna	A	O	23.8
Beta vulgaris	A	S	24.1
Beta vulgaris	A	O	42.9
Beta vulgaris	A	O	94.3
Beta vulgaris	A	R	97.9
Beta vulgaris var. condavata	A	O	21.2
Brassica napus	A	S	25.0
Brassica napus	A	O	100.0
Brassica oleracea	A	S	39.9
Canna edulis	A	S	39.6
Capsicum annuum	A	S	35.4
Capsicum frutescens	A	S	27.2
Cichorium intybus	A	O	20.2
Cichorium intybus	A	R	26.5
Cichorium intybus	A	S	28.2
Citrullus lanatus	A	S	21.7
Citrullus lanatus	A	O	27.8
Citrullus lanatus	A	R	34.4
Colx Lacryma-Jobi	A	S	37.3
Colx Lacryma-Jobi	A	O	78.1
Cosmos sulphureus	A	R	26.8
Crataegus submollis	A	S	22.3
Crataegus submollis	A	R	61.6
Cucumis anguria	A	S	27.8
Cucurbita Maxima	A	S	28.9
Cucurbita moschata	A	S	32.9
Cucurbita pepo	A	S	50.9
Datisca cannabina	A	R	43.3
Datisca cannabina	A	S	100.0
Digitalis purpurea	A	R	20.0
Dipsacus sativus	A	R	64.8
Dirca palustris	A	S	29.6
Dryopteris filix-mas	A	R	22.0

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
<i>Dryopteris filix-mas</i>	A	O	32.8
<i>Echinacea purpurea</i>	A	O	100.0
<i>Fagopyrum tataricum</i>	A	R	28.3
<i>Fagopyrum tataricum</i>	A	O	29.7
<i>Filipendula rubra</i>	A	S	43.7
<i>Filipendula rubra</i>	A	R	63.2
<i>Fragaria x ananassa</i>	A	R	41.5
<i>Fragaria x ananassa</i>	A	S	67.1
<i>Fragaria x ananassa</i>	A	O	99.6
<i>Fragaria x ananassa</i>	A	R	31.7
<i>Gaultheria hispidula</i>	A	R	50.5
<i>Glycyrrhiza glabra</i>	A	R	56.2
<i>Hedeoma pulegioides</i>	A	O	51.7
<i>Helianthus tuberosus</i>	A	O	22.9
<i>Hordeum vulgare subsp vulgare</i>	A	S	36.0
<i>Hypericum henryi</i>	A	R	67.2
<i>Hypericum perforatum</i>	A	R	31.7
<i>Hyssopus officinalis</i>	A	R	21.6
<i>Iris versicolor</i>	A	R	53.6
<i>Isatis tinctoria</i>	A	S	32.9
<i>Levisticum officinale</i>	A	O	46.7
<i>Lotus tetragonolobus</i>	A	R	26.2
<i>Matricaria recutita</i>	A	S	43.5
<i>Matteucia pensylvanica</i>	A	R	24.7
<i>Melissa officinalis</i>	A	S	30.3
<i>Mentha suaveolens</i>	A	R	91.7
<i>Nepeta cataria</i>	A	S	30.3
<i>Nigella sativa</i>	A	O	26.0
<i>Ocinum tenuiflorum</i>	A	O	33.0
<i>Ocinum tenuiflorum</i>	A	R	49.8
<i>Perilla frutescens</i>	A	R	34.8
<i>Petasites japonicus</i>	A	R	38.0
<i>Phaseolus mungo</i>	A	O	62.6
<i>Phaseolus vulgaris</i>	A	S	21.2
<i>Phaseolus vulgaris</i>	A	O	50.6
<i>Phaseolus Vulgaris</i>	A	R	100.0
<i>Phlox paniculata</i>	A	S	46.4
<i>Physalis alkekengi</i>	A	O	37.5
<i>Plantago major</i>	A	O	27.3
<i>Polygonum aviculare Linné</i>	A	S	24.8
<i>Polygonum persicaria</i>	A	S	59.1
<i>Potentilla anserina</i>	A	R	40.1
<i>Poterium sanguisorba</i>	A	R	75.7
<i>Prunus cerasifera</i>	A	R	80.0
<i>Platidium aquilinus</i>	A	R	39.6
<i>Raphanus raphanistrum</i>	A	S	28.2
<i>Raphanus sativus</i>	A	S	64.4

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Ribes nigrum	A	O	47.6
ribes uva-crispa	A	R	21.0
ribes uva-crispa	A	O	100.0
Rosa rugosa	A	S	21.4
Rosmarinus officinalis	A	R	27.3
Rubus allegheniensis	A	R	81.0
Rubus arcticus	A	R	51.0
Rubus canadensis	A	R	48.8
Rubus idaeus	A	S	28.5
Rubus idaeus	A	R	35.1
Rubus pubescens	A	O	50.4
Rubus thibetanus	A	O	39.1
Rumex patientia	A	S	24.8
Ruta graveolens	A	O	56.1
Salvia officinalis	A	R	43.2
Santolina chamaecyparissus	A	R	27.0
Scutellaria lateriflora	A	R	53.5
Solanum melongena	A	S	21.8
Solidago canadensis	A	S	27.4
Stachys affinis	A	S	100.0
Stellaria media	A	O	24.4
Tanacetum vulgare	A	R	62.1
Thymus praecox subsp arcticus	A	S	28.4
Thymus praecox subsp arcticus	A	O	31.8
Trichosanthes kirilowii	A	S	23.2
Vaccinium Corymbosum	A	R	100.0
Vaccinium macrocarpon	A	S	48.8
Vaccinium angustifolium	A	R	56.6
Vigna angularis	A	O	23.1
Vigna sesquipedalis	A	O	37.8
Vigna unguiculata	A	S	52.5
Vinca minor	A	O	23.2
Vitis sp.	A	S	20.8
Vitis sp.	A	O	21.5
Vitis sp.	A	R	33.6
Xanthium sibiricum	A	S	27.3
Aconitum napellus	G	O	59.0
Agropyron repens	G	O	69.4
Alchemilla mollis	G	S	30.6
Alchemilla mollis	G	O	73.3
Allium grande	G	O	33.4
Anethum graveolens	G	S	40.5
Aronia melanocarpa	G	O	100.0
Artemisia absinthium	G	S	31.3
Artemisia absinthium	G	O	67.9
Artemisia dracunculus	G	S	100.0
Atropa belladonna	G	S	41.2

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Bellis perennis	G	S	48.4
Brassica oleracea	G	S	26.4
Brassica oleracea	G	O	40.8
Brassica rapa	G	S	21.4
Capsicum annuum	G	S	35.0
Capsicum annuum	G	S	35.7
Capsicum frutescens	G	S	27.5
Chelidonium majus	G	O	34.7
Cichorium intybus	G	R	34.4
Cofx Lacryma-Jobi	G	S	20.2
Cosmos sulphureus	G	O	32.9
Crataegus submollis	G	S	25.6
Crataegus submollis	G	R	28.6
Cucumis anguria	G	S	33.8
Cucurbita maxima	G	S	44.6
Cucurbita moschata	G	S	33.4
Cucurbita pepo	G	S	25.3
Cymbopogon citratus	G	S	30.3
Cymbopogon martinii	G	S	61.1
Daucus carota	G	O	30.0
Dryopteris filix-mas	G	S	26.0
Dryopteris filix-mas	G	R	45.3
Echinacea purpurea	G	O	51.8
Echinochloa frumentacea	G	S	30.3
Fagopyrum esculentum	G	R	50.9
Fagopyrum tartaricum	G	O	44.0
Fagopyrum tartaricum	G	R	46.0
Filipendula rubra	G	S	53.1
Filipendula rubra	G	R	58.7
Forsythia intermedia	G	O	52.9
Fragaria x ananassa	G	R	40.7
Fragaria x ananassa	G	R	28.1
Gaultheria hispidula	G	R	72.8
Gaultheria hispidula	G	O	100.0
Gaultheria procumbens	G	R	24.1
Glycine max	G	S	31.2
Glycynhiza glabra	G	R	37.1
Guizotia abyssinica	G	R	35.4
Hamamelis virginiana	G	S	29.1
Hamamelis virginiana	G	R	67.1
Helenium hoopesii	G	R	39.8
Helianthus tuberosus	G	O	32.8
Hordeum hexastichon	G	S	60.9
Humulus lupulus	G	R	61.2
Humulus lupulus	G	S	90.5
Hypericum henryi	G	R	100.0
Hypericum perforatum	G	R	43.4

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Hyssopus officinalis	G	S	25.1
Hyssopus officinalis	G	O	48.2
Iris versicolor	G	R	47.0
Isatis tinctoria	G	S	32.1
Lavandula angustifolia	G	S	43.9
Levisticum officinale	G	O	51.4
Malus hupehensis	G	S	24.2
Malus hupehensis	G	R	37.2
Malva sylvestris	G	O	73.7
Matricaria recutita	G	S	31.5
Metaleuca alternifolia	G	S	21.6
Melissa officinalis	G	S	32.8
Melissa officinalis	G	R	44.8
Melissa officinalis	G	O	82.4
Mentha piperita	G	R	77.3
Mentha pulegium	G	R	41.1
Monarda didyma	G	S	31.8
Nepeta cataria	G	R	25.8
Nepeta cataria	G	O	84.9
Nigella sativa	G	O	44.9
Ocimum tenuiflorum	G	R	23.7
Oenothera biennis	G	S	25.6
Origanum vulgare	G	S	28.6
Origanum vulgare	G	R	31.2
Pennisetum alopecuroides	G	S	49.9
Petroselinum crispum	G	S	31.5
Peucedanum oreaselinum	G	R	68.3
Phaseolus acutifolius	G	R	25.4
Phaseolus acutifolius	G	O	61.8
Phaseolus vulgaris	G	O	24.4
Phaseolus vulgaris	G	S	35.6
Phlox paniculata	G	S	27.2
Physalis alkekengi	G	R	26.1
Physalis alkekengi	G	O	54.9
Plantago major	G	O	55.9
Plectranthus sp.	G	R	23.0
Polygonum persicaria	G	S	41.1
Potentilla anserina	G	R	55.4
Poterium sanguisorba	G	R	76.4
Prunus cerasifera	G	R	55.3
Psidium aquilinus	G	R	44.5
Rhaphanus sativus	G	O	98.1
Rheum X cultorum	G	R	27.0
Ribes nigrum	G	R	22.0
Ribes silvestris	G	R	88.8
Rosmarinus officinalis	G	R	39.4
Rubus idaeus	G	S	100.0



Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Rubus ideaus	G	O	37.0
Rubus Phoenicalasius	G	R	24.9
Rubus pubescens	G	O	23.0
Rubus thibetanus	G	O	41.2
Rumex patientia	G	S	36.2
Salvia officinalis	G	O	34.5
Salvia officinalis	G	R	69.5
Sanguisorba officinalis	G	S	46.8
Santolina chamaecyparissus	G	R	33.7
Secale cereale	G	S	24.4
Senecio vulgaris	G	R	37.8
Solanum melongena	G	S	21.1
Solanum tuberosum	G	S	27.6
Sorghum dochna	G	S	23.7
Sorghum dochna	G	R	56.3
Symphytum officinale	G	S	25.2
Teucrium chamaedrys	G	S	75.4
Thymus praecox subsp arcticus	G	S	28.4
Thymus praecox subsp arcticus	G	O	52.1
Thymus x citriodorus	G	R	25.3
Triticum durum	G	S	21.9
Triticum turgidum	G	O	80.2
Vaccinium angustifolium	G	R	47.8
Vaccinium angustifolium	G	R	48.1
Vaccinium angustifolium	G	R	71.0
Vaccinium corymbosum	G	R	60.6
Vaccinium corymbosum	G	R	61.7
Vaccinium corymbosum	G	O	99.4
Vaccinium macrocarpon	G	R	100.0
Vaccinium angustifolium	G	O	24.4
Vaccinium angustifolium	G	R	41.5
Valeriana officinalis	G	R	33.5
Veronica officinalis	G	S	27.0
Vicia faba	G	O	31.2
Vicia faba	G	R	44.7
Vigna angularis	G	O	40.8
Vigna angularis	G	S	39.4
Vigna unguiculata	G	O	26.1
Vitis sp.	G	R	62.4
Vitis sp.	G	S	63.3
Vitis sp.	G	O	82.0
Withania somnifera	G	S	22.4
Xanthium strumarium	G	S	20.7
Zea mays	G	S	26.1
Zea mays	G	R	67.6
Abies lasiocarpa	T	R	46.2
Acorus calamus	T	R	21.8

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
<i>Actinidia arguta</i>	T	R	64.6
<i>Agropyron repens</i>	T	O	48.3
<i>Alchemilla mollis</i>	T	R	100.0
<i>Alchemilla mollis</i>	T	O	100.0
<i>Allium cepa</i>	T	R	39.8
<i>Allium cepa</i>	T	O	45.2
<i>Allium tuberosum</i>	T	R	28.2
<i>Allium tuberosum</i>	T	S	28.8
<i>Alpinia officinarum</i>	T	S	26.4
<i>Amelanchier alnifolia</i>	T	R	78.3
<i>Amelanchier sanguinea</i> x <i>A. laevis</i>	T	R	88.5
<i>angelica archangelica</i>	T	S	25.2
<i>Aplum graveolens</i>	T	R	49.3
<i>Aralia cordata</i>	T	S	31.5
<i>Aralia nudicaulis</i>	T	S	37.7
<i>Aralia nudicaulis</i>	T	R	48.5
<i>Aronia melanocarpa</i>	T	S	28.0
<i>Aronia melanocarpa</i>	T	O	53.3
<i>Aronia prunifolia</i>	T	R	79.2
<i>Artemisia absinthium</i>	T	O	100.0
<i>Artemisia dracuncul</i>	T	S	42.0
<i>Ayperus esculentus</i>	T	O	67.8
<i>Beta vulgaris</i>	T	R	27.9
<i>Beta vulgaris</i>	T	S	33.2
<i>Beta vulgaris</i>	T	O	53.0
<i>Borago officinalis</i>	T	O	55.7
<i>Brassica Napus</i>	T	O	71.9
<i>Brassica oleracea</i>	T	O	37.0
<i>Brassica oleracea</i>	T	S	48.9
<i>Brassica rapa</i>	T	S	38.7
<i>Bromus inermis</i>	T	R	42.8
<i>Calendula officinalis</i> L.	T	S	28.4
<i>Camellia sinensis</i> syn. <i>Thea sinensis</i>	T	R	88.4
<i>Capsicum annus</i>	T	S	29.7
<i>Capsicum annus</i>	T	R	43.7
<i>Capsicum frutescens</i> (tabasco)	T	S	22.0
<i>Carya cordiformis</i>	T	R	27.5
<i>Chaerophyllum bulbosum</i>	T	S	27.1
<i>Chaerophyllum bulbosum</i>	T	O	100.0
<i>Cheidonium majus</i>	T	O	54.0
<i>Chrysanthemum parthenium</i>	T	S	50.4
<i>Chrysanthemum coronarium</i>	T	S	25.8
<i>Cichorium intybus</i>	T	R	23.9
<i>Citrullus lanatus</i>	T	S	33.2
<i>Citrullus lanatus</i> (Garden baby)	T	S	21.4
<i>Citrus limetoides</i>	T	O	39.2
<i>Citrus limon</i>	T	O	60.4

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Corchorus olitorius	T	S	28.6
Cornus canadensis L.	T	O	50.0
Cornus canadensis L.	T	R	80.8
Cosmos sulphureus	T	R	20.5
Cosmos sulphureus	T	S	27.0
Crataegus sp	T	S	43.9
Crataegus submollis	T	O	24.2
Crataegus submollis	T	R	55.1
Cucumis anguria	T	S	33.2
Cucumis sativus Fanfare	T	S	35.4
Cucurbita moschata	T	S	30.4
Cucurbita pepo	T	R	23.8
Cucurbita pepo	T	S	46.6
Cuminum cyminum	T	S	23.1
Curcuma zedoaria	T	S	20.8
Cymbopogon citratus	T	S	39.7
Dolichus lablab	T	S	25.8
Dryopteris filix-mas	T	O	54.0
Echinacea purpurea	T	S	20.4
Eriobotrya japonica	T	O	34.8
Eriobotrya japonica	T	S	42.9
Foeniculum vulgare	T	O	33.1
Fragaria x ananassa	T	S	20.3
Fragaria x ananassa	T	R	42.8
Glycine max	T	O	26.3
Glycine max	T	O	30.5
Gossypium herbaceum	T	R	22.5
Gutzotia abyssinica	T	R	46.6
Hamamelis virginiana	T	S	33.1
Hamamelis virginiana	T	S	33.1
Hamamelis virginiana	T	R	44.8
Hedeoma pulegiodes	T	O	46.6
Helianthemum hoopestii	T	R	27.9
Helianthus annuus	T	S	22.7
Helianthus strumosus	T	O	30.0
Heliotropium arborescens	T	O	53.7
Helleborus niger	T	S	40.5
Hibiscus cannabinus	T	O	34.0
Hordeum vulgare subsp. Vulgare	T	O	100.0
Humulus lupulus	T	S	24.9
Humulus lupulus	T	R	55.1
Humulus lupulus	T	R	77.6
Humulus lupulus	T	S	79.1
Humulus lupulus	T	S	100.0
Humulus lupulus	T	R	100.0
Humulus lupulus	T	S	100.0
Hypericum henryi	T	R	100.0

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Hypericum perforatum	T	O	99.3
Hypomyces lactiflorum	T	O	20.5
Iris versicolor	T	R	48.5
Juniperus communis	T	R	33.8
Lactuca serriola	T	R	21.5
Laportea canadensis	T	S	37.7
Lavendula angustifolia	T	S	91.7
Lepidium sativum	T	R	24.7
Levisticum officinale	T	O	24.9
Lolium perenne	T	S	22.3
Lonicera ramosissima	T	R	42.5
Lonicera syringantha	T	R	21.1
Malus	T	O	53.1
Malus hupehensis (Pamp.) Rehd.	T	R	76.5
Malus sp.	T	R	39.8
Malus sp.	T	R	45.7
Malva moschata	T	S	22.8
Malva sylvestris	T	O	57.8
Matteucia pennsylvanica	T	R	20.1
Melissa officinalis	T	O	55.0
Mentha piperita	T	R	35.5
Mentha piperita	T	O	43.9
Mentha piperita	T	R	56.6
Mentha pulegium	T	O	33.3
Mentha pulegium	T	R	56.2
Mentha spicata	T	O	43.4
Mentha spicata	T	O	58.0
Nicotiana tabacum	T	R	27.3
Nigella arvensis	T	R	25.1
Ocimum Basilicum	T	R	20.2
Oenothera biennis	T	S	37.8
Origanum marjorana	T	R	45.2
Origanum vulgare	T	S	21.3
Origanum vulgare	T	O	23.3
Origanum vulgare	T	R	23.6
Origanum vulgare	T	O	37.2
Panicum miliaceum	T	S	20.6
Panicum miliaceum	T	S	30.7
Pastinaca sativa	T	R	26.1
Pastinaca sativa	T	O	100.0
Peucedanum oreaselinum	T	S	39.6
Peucedanum oreaselinum	T	R	53.4
Phaseolus vulgaris	T	S	21.8
Phaseolus vulgaris	T	O	23.6
Phaseolus vulgaris	T	O	59.8
Physalis alkekengi	T	O	55.5
Physalis pruinosa	T	S	24.8

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Plantago major	T	O	77.1
Poa compressa	T	R	54.4
Polygonium chinense	T	O	36.3
Polygonium chinense	T	R	61.4
Polygonum persicaria	T	S	21.3
Populus incassata	T	S	50.7
Populus incassata	T	S	50.7
Populus X petrowskyana	T	R	66.7
Prunus cerasifera	T	O	28.1
Prunus cerasifera	T	R	64.2
Psidium guajaba	T	S	22.9
Pteridium aquilinus	T	R	43.0
Pyrus pyrifolia	T	S	28.2
Rhamnus frangula	T	R	25.9
Raphanus sativus	T	R	21.4
Raphanus sativus	T	O	36.9
Rhamnus frangula	T	O	43.2
Rheum rhabarbarum	T	O	28.5
Rheum X cultorum	T	R	28.2
Rianus communis	T	S	32.4
Ribes nidigrolaria	T	S	28.5
Ribes nigrum	T	R	49.9
Rosa rugosa	T	S	29.1
Rosmarinum officinalis	T	R	48.2
Rubus arcticus	T	R	59.1
Rubus ideaus	T	O	21.5
Rubus pubescens	T	O	51.8
Rubus tibetanus	T	O	33.7
Rumex patientia	T	S	34.4
Ruta graveolens	T	O	24.3
Salvia (elegens)	T	O	37.2
Salvia (elegens)	T	R	42.9
Salvia officinalis	T	R	67.3
Sambucus canadensis	T	S	30.2
Sanguisorba minor	T	R	21.0
Sanguisorba minor	T	R	29.9
Sanguisorba minor	T	R	30.8
Sanguisorba minor	T	R	44.5
Santolina	T	R	43.8
Serratula tinctoria	T	S	37.7
Satureja montana	T	R	45.0
Satureja repandra	T	S	46.3
Scorzonera hipanica	T	R	25.7
Scutellaria lateriflora	T	S	41.2
Setaria italica	T	S	33.4
Solidago canadensis	T	S	78.5
Stachys affinis	T	S	100.0

Table 3  
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)
Stachys byzantina	T	O	100.0
Stellaria media (linné) Cyrillo	T	O	51.2
Tanacetum vulgare	T	R	30.5
Tepary	T	R	31.7
Tepary	T	O	39.7
Thymus serpyllum	T	O	29.9
Thymus serpyllum	T	R	32.8
Thymus X citriodorus	T	S	22.1
Tiarella cordifolia	T	R	46.8
Tragopogon porrifolium	T	R	26.3
Tragopogon porrifolium	T	R	29.8
Tragopogon porrifolium	T	O	58.0
Triticale sp.	T	O	25.3
Tropaeolum majus	T	O	46.9
Tropaeolum majus	T	O	55.8
Tropaeolum majus	T	R	64.7
Tsuga canadensis	T	R	39.2
Vaccinium angustifolium	T	R	28.0
Vaccinium angustifolium	T	S	29.6
Vaccinium angustifolium	T	R	33.3
Vaccinium angustifolium Ait.	T	R	100.0
Vaccinium macrocarpon	T	S	25.1
Vaccinium macrocarpon	T	R	27.4
Vaccinium macrocarpon	T	O	35.4
Vaccinium macrocarpon	T	R	80.5
Vaccinium macrocarpon	T	O	90.5
Valeriana officinalis	T	O	33.0
Veratrum viride	T	S	46.8
Verbascum thapsus	T	O	33.4
Vicia faba	T	R	26.6
Vicia faba	T	O	35.8
Vigna angularia	T	S	29.3
Vigna angularia	T	O	54.0
Vigna sesquipedalis	T	O	100.0
Vigna unguiculata	T	S	49.5
Vitis sp.	T	O	99.6
Vitis sp.	T	R	50.9
Vitis sp.	T	R	75.8
Welgela coracensis	T	S	22.8
Welgela coracensis	T	S	22.8
Welgela hortensis	T	R	54.9
Zea mays	T	O	74.3

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Abelmoschus esculentus	A	S	26.8
Achillea millefolium	A	S	41.6
Aconitum napellus	A	O	47.7
Acorus calamus	A	O	83.2
Actinidia arguta	A	S	26.8
Adiantum pedatum	A	O	20.7
Agastache foeniculum	A	S	100.0
Agrimonia eupatoria	A	W	21.4
Agropyron cristatum	A	R	51.4
Agropyron repens	A	S	27.3
Agrostis alba	A	R	40.6
Agrostis Stolonifera	A	R	35.4
Alcea rosea	A	S	45.8
Alkanna tinctoria	A	S	42.5
Allium cepa	A	O	49.7
Allium grande	A	R	71.4
Allium porrum	A	S	28.0
Allium porrum	A	O	82.0
Allium sativum	A	S	23.7
Allium schoenoprasum	A	O	45.5
Allium tuberosum	A	V	20.1
Allium Tuberosum	A	O	91.5
Althaea officinalis	A	S	29.6
Amaranthus gangeticus	A	O	25.1
Amaranthus gangeticus	A	R	31.1
Amaranthus gangeticus	A	S	73.2
Amaranthus retroflexus	A	S	20.4
Ambrosia artemisiifolia	A	R	50.1
Amelanchier sanguinea	A	W	37.6
Anthemis nobilis	A	O	40.4
Anthemis nobilis	A	R	68.7
Anthemis tinctorium	A	S	30.3
Apium graveolens	A	R	71.2
Arachis hypogaea	A	V	23.5
Aralia cordata	A	S	21.2
Aralia cordata	A	S	56.3
Arctium minus	A	R	31.1
Arctostaphylos uva-ursi	A	S	31.2
Arctostaphylos uva-ursi	A	O	31.2
Arctostaphylos uva-ursi	A	R	59.7
Armoracia rusticana	A	W	25.1
Armoracia rusticana	A	S	56.2
Aronia melanocarpa	A	S	26.8
Aronia melanocarpa	A	S	41.3
Aronia melanocarpa	A	O	44.8
Aronia melanocarpa	A	W	47.7
Aronia melanocarpa	A	R	55.7
Aronia melanocarpa	A	V	100.0
Arrhenatherum elatius	A	R	40.4

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Artemisia dracunculus	A	S	51.1
Asparagus officinalis	A	S	20.9
Asparagus officinalis	A	S	32.6
Aster sp	A	O	29.5
Aster sp	A	R	80.0
Atropa belladonna	A	S	47.4
Beta vulgaris	A	S	25.3
Beta vulgaris	A	R	26.8
Beta vulgaris	A	W	34.0
Beta vulgaris	A	O	42.0
Beta vulgaris	A	V	44.0
Beta vulgaris spp. Maritima	A	R	44.0
Beta vulgaris var. conditiva	A	R	35.4
Brassica napus	A	S	24.6
Brassica napus	A	R	53.1
Brassica napus	A	O	100.0
Brassica nigra	A	S	24.2
Brassica oleracea	A	R	33.0
Brassica oleracea	A	R	36.0
Brassica oleracea	A	W	36.2
Brassica oleracea	A	S	73.1
Brassica Oleracea	A	O	100.0
Brassica rapa	A	R	31.0
Brassica rapa	A	W	38.6
Brassica rapa	A	V	42.8
Brassica rapa	A	R	48.8
Brassica rapa	A	S	68.2
Brassica rapa	A	O	89.2
Bromus inermis	A	R	51.4
Campanula rapunculifus	A	O	25.1
Canna edulis	A	S	31.1
Canna edulis	A	O	47.6
Canna edulis	A	R	68.9
Capsella bursa-pastoris	A	R	32.5
Capsicum annuum	A	O	22.0
Capsicum annuum	A	R	24.0
capsicum annuum	A	S	55.7
Capsicum frutescens	A	S	30.3
Capsicum frutescens	A	O	34.7
Carthamus tinctorius	A	R	28.5
Carum carvi	A	S	38.6
Chelidonium majus	A	O	27.9
Chenopodium bonus-henricus	A	R	47.4
Chenopodium bonus-henricus	A	O	20.7
Chenopodium bonus-henricus	A	W	23.2
chenopodium bonus-henricus	A	S	62.8
Chenopodium quinoa	A	V	23.1



Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Chenopodium quinoa	A	W	34.7
Chrysanthemum leucanthemum	A	O	20.6
Chrysanthemum leucanthemum	A	R	30.9
Chrysanthemum coronarium (Chp Suey)	A	R	26.4
Chrysanthemum coronarium	A	S	66.6
Cichorium intybus	A	S	44.7
Citrullus lanatus	A	S	62.1
Citrullus lanatus	A	O	70.6
Cornus canadensis	A	S	48.5
Cosmos sulphureus	A	S	23.4
Cosmos sulphureus	A	O	37.0
Crataegus sp	A	V	32.4
Crataegus sp	A	S	45.5
Crataegus sp	A	R	100.0
Crataegus subnollis	A	S	45.5
Cryptotaenia canadensis	A	W	28.4
Cucumis Anguria	A	R	27.2
Cucumis anguria	A	S	36.6
Cucumis anguria	A	O	38.5
Cucumis melo	A	O	59.2
Cucumis sativus	A	R	39.8
Cucumis sativus	A	O	49.4
Cucumis sativus	A	S	54.4
Cucurbita Maxima	A	O	48.7
Cucurbita moschata	A	S	32.1
Cucurbita pepo	A	O	37.0
Cucurbita pepo	A	R	41.0
Cucurbita pepo	A	S	43.9
Curcuma zedoaria	A	S	67.6
Cucurbita maxima	A	S	25.8
Cymbopogon citratus	A	O	26.7
Dactylis glomerata	A	R	27.2
Datisca cannabina	A	S	26.9
Datisca cannabina	A	O	38.0
Daucus carota	A	R	30.8
Daucus carota	A	O	31.9
Dirca palustris	A	O	27.3
Dirca palustris	A	S	34.2
Dolicos Lablab	A	S	22.0
Dolicos Lablab	A	R	25.3
Dryopteris filix-mas	A	S	24.9
Dryopteris filix-mas	A	R	40.6
Eleusine coracana	A	S	20.2
Eleusine coracana	A	R	20.9
Eleusine coracana	A	O	71.1
Elymus junceus	A	R	45.4
Erigeron canadensis	A	S	35.7
Eruca vesicaria	A	R	59.9

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Fagopyrum esculentum	A	V	20.7
Fagopyrum tartaricum	A	W	30.3
Fagopyrum tartaricum	A	O	33.2
Festuca rubra	A	R	31.8
Foeniculum Vulgare	A	W	27.4
Foeniculum vulgare	A	O	50.6
Forsythia intermedia	A	O	100.0
Fragaria x ananassa	A	V	30.0
Fragaria x ananassa	A	S	38.3
Galium odoratum	A	R	26.9
Gaultheria hispidula	A	R	28.4
Gaultheria hispidula	A	S	40.7
Gentiana lutea	A	R	34.7
Glechoma hederacea	A	S	37.6
Glycine max	A	R	38.1
Glycine Max	A	O	56.4
Glycine max	A	S	71.4
Glycyrrhiza glabra	A	S	62.6
Glycyrrhiza glabra	A	W	100.0
Guizotia abyssinica	A	R	91.9
Hamamelis virginiana	A	S	41.0
Hamamelis virginiana	A	R	74.6
Hedeoma pulegioides	A	O	22.0
Helianthus tuberosus	A	W	21.2
Helianthus tuberosus	A	W	51.5
Helichrysum angustifolium	A	V	21.0
Heliotropium arborescens	A	S	54.1
Helleborus niger	A	S	37.8
Hordeum hexastichon	A	W	38.0
Hyssopus officinalis	A	O	25.1
Inula helentium	A	S	29.7
Isatis tinctoria	A	S	41.5
Lactuca serriola	A	R	41.3
Lactuca serriola	A	S	46.6
Laportea canadensis	A	S	26.3
Lathyrus sativus	A	O	22.2
Lathyrus sativus	A	R	50.2
Lathyrus sylvestris	A	V	31.3
Lathyrus sylvestris	A	W	31.8
Laurus nobilis	A	S	25.7
Laurus nobilis	A	V	30.0
Lavandula latifolia	A	S	40.3
Leonurus cardiaca	A	R	27.0
Lepidium sativum	A	S	41.8
Levisticum officinale	A	S	29.0
Levisticum officinale	A	O	44.9
Linaria vulgaris miller	A	O	23.6
Linum usitatissimum	A	R	33.3
Lolium multiflorum	A	S	29.0

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
<i>Lolium perenne</i>	A	R	52.0
<i>Lotus corniculatus</i>	A	R	62.9
<i>Lotus tetragonolobus</i>	A	S	62.9
<i>Lycopersicon esculentum</i>	A	S	26.1
<i>Lycopersicon esculentum</i>	A	W	33.0
<i>Malva moschata</i>	A	S	31.8
<i>Malva sylvestris</i>	A	S	21.4
<i>Malva verticillata</i>	A	R	43.4
<i>Matteucia pensylvanica</i>	A	R	26.9
<i>Medicago sativa</i>	A	V	20.4
<i>Meibotus albus</i>	A	R	53.9
<i>Melissa officinalis</i>	A	S	21.4
<i>Melissa officinalis</i>	A	O	36.8
<i>Melissa officinalis</i>	A	R	53.7
<i>Melissa officinalis</i>	A	S	57.7
<i>Mentha piperita</i>	A	S	66.1
<i>Mentha pulegium</i>	A	S	67.7
<i>Mentha spicata</i>	A	S	51.8
<i>Mentha suaveolens</i>	A	R	29.7
<i>Momordica charantia</i>	A	S	72.1
<i>Momordica charantia</i>	A	O	30.3
<i>Nicotiana rustica</i>	A	S	59.1
<i>Nicotiana rustica</i>	A	S	39.0
<i>Nicotiana tabacum</i>	A	W	47.6
<i>Nicotiana tabacum</i>	A	O	100.0
<i>Nigella sativa</i>	A	R	59.4
<i>Oenothera biennis</i>	A	O	21.3
<i>Oenothera biennis</i>	A	O	36.7
<i>Origanum vulgare</i>	A	W	21.3
<i>Origanum vulgare</i>	A	V	42.7
<i>Oryza sativa</i>	A	W	56.5
<i>Oxyria digyna</i>	A	W	35.1
<i>Oxyria digyna</i>	A	V	78.4
<i>Oxyria digyna</i>	A	V	20.3
<i>Pastinaca sativa</i>	A	W	23.2
<i>Pastinaca sativa</i>	A	O	42.1
<i>Pastinaca sativa</i>	A	R	46.9
<i>Pastinaca sativa</i>	A	R	20.3
<i>Phalaris canariensis</i>	A	O	60.5
<i>Phalaris canariensis</i>	A	O	51.3
<i>Phaseolus mungo</i>	A	S	74.1
<i>Phaseolus mungo</i>	A	V	23.0
<i>Phaseolus vulgaris</i>	A	O	51.4
<i>Phaseolus vulgaris</i>	A	S	62.6
<i>Phaseolus vulgaris</i>	A	O	41.0
<i>Phlox paniculata</i>	A	R	31.6
<i>Physalis alkekengi</i>	A	S	45.2
<i>Physalis ixocarpa</i>	A	S	45.2

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Physalis Ixocarpa	A	O	65.3
Physalis Pruinosa	A	O	87.3
Phytolacca americana	A	S	49.6
Phytolacca americana	A	O	89.8
Pimpinella anisum	A	S	100.0
Plantago coronopus	A	S	48.3
Plantago coronopus	A	O	89.3
Plantago major	A	S	21.8
Poa compressa	A	R	22.4
Poa compressa	A	S	49.3
Poa pratensis	A	R	22.4
Polygonum pensylvanicum	A	S	43.3
Polygonum persicaria	A	O	21.6
Polygonum persicaria	A	S	38.5
Potentilla anserina	A	S	26.3
Potentilla anserina	A	O	31.2
Poterium Sanguisorba	A	S	29.2
Pteridium aquilinum	A	S	27.3
Raphanus sativus	A	W	22.7
Raphanus sativus	A	R	30.8
Raphanus sativus	A	R	40.2
Raphanus sativus	A	S	71.5
Raphanus sativus	A	O	100.0
Rheum rhabarbarum	A	S	21.3
Rheum rhabarbarum	A	V	67.9
Rheum rhabarbarum	A	W	72.4
Ribes nigrum	A	W	32.6
Ribes nigrum	A	V	64.6
Ribes nigrum	A	W	23.6
Ribes nigrum	A	V	27.2
Ribes nigrum	A	S	41.0
Ribes nigrum	A	O	65.8
Ribes Nigrum	A	W	100.0
Ribes Sativum	A	R	75.4
Ribes Sylvestre	A	V	27.7
Ribes Sylvestre	A	W	100.0
ribes uva-crispa	A	S	24.4
Ribes Uva-crispa	A	W	36.6
Ricinus communis	A	R	21.6
Rosa rugosa	A	V	30.8
Rosa rugosa	A	S	36.2
Rosa rugosa	A	W	39.3
Rosmarinus officinalis	A	W	27.2
Rosmarinus officinalis	A	R	45.7
Rubus ateghensis	A	S	53.7
Rubus canadensis	A	V	27.0
Rubus canadensis	A	S	41.0
Rubus canadensis	A	W	41.2

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Rubus canadensis	A	S	45.1
Rubus idaeus	A	V	24.3
Rubus idaeus	A	S	39.7
Rubus idaeus	A	W	62.2
Rubus idaeus	A	R	37.0
Rumex acetosella	A	V	75.8
Rumex acetosella	A	W	25.5
Rumex crispus	A	R	73.3
Rumex crispus	A	O	60.5
Rumex patientia	A	O	49.4
Rumex patientia	A	S	65.8
Rumex Scutatus	A	W	25.5
Rumex Scutatus	A	V	61.9
Rumex Scutatus	A	O	93.8
Ruta graveolens	A	S	25.8
Ruta graveolens	A	W	27.1
Salix purpurea	A	S	22.1
Salix purpurea	A	R	33.8
Salvia elegans	A	W	23.7
Salvia officinalis	A	V	20.8
Salvia officinalis	A	S	31.4
Salvia sclarea	A	S	28.0
Satureja montana	A	W	21.7
Scutellaria lateriflora	A	S	54.1
Secale cereale	A	V	22.6
Secale cereale	A	S	22.9
Secale cereale	A	W	26.9
Sesamum indicum	A	O	21.2
Setaria italica	A	O	27.0
Sium Sissarum	A	R	32.6
Sium Sissarum	A	O	42.7
Solanum dulcamara	A	S	43.3
Solanum dulcamara	A	O	48.6
Solanum melancerasum	A	O	21.3
Solanum melongena	A	R	20.5
Solanum melongena	A	V	35.6
Solanum melongena	A	O	49.4
Solanum melongena	A	S	65.2
Solidago sp	A	R	32.7
Spinacia oleracea	A	S	41.0
Stachys affinis	A	R	22.5
Stachys affinis	A	S	43.9
Stachys affinis	A	O	92.0
Symphitum officinale	A	S	28.0
Tanacetum cinerariifolium	A	O	20.3
Tanacetum cinerariifolium	A	R	69.7
Tanacetum vulgare	A	O	20.2
Tanacetum vulgare	A	S	84.2
Teucrium chamaedrys	A	O	20.4

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Teucrium chamaedrys	A	R	20.4
Thymus serpyllum	A	W	24.3
Thymus vulgaris	A	S	42.5
Thymus x citriodorus	A	W	27.4
Tragopogon porrifolius	A	W	21.9
Tragopogon porrifolius	A	V	26.2
Trifolium hybridum	A	R	30.9
Trifolium pannonicum	A	R	41.0
Trifolium repens	A	R	51.3
Trigonella foenum graecum	A	S	44.2
Triticum spelta	A	S	30.0
Triticum turgidum	A	S	31.3
Typha latifolia	A	S	57.7
Urtica dioica	A	O	28.5
Urtica dioica	A	S	50.2
Vaccinium Corymbosum	A	W	39.9
Vaccinium Corymbosum	A	S	64.8
Vaccinium angustifolium	A	R	44.8
Vaccinium macrocarpon	A	S	100.0
Veratrum viride	A	S	29.1
Veratrum viride	A	O	31.8
Verbascum thapsus	A	S	42.6
Verbascum thapsus	A	O	75.2
Viburnum trilobum	A	V	97.4
Vicia sativa	A	R	53.3
Vicia villosa	A	R	48.9
Vigna unguiculata	A	R	27.0
Vigna unguiculata	A	O	44.8
Vigna unguiculata	A	S	55.5
Vinca minor	A	S	35.1
Vitis sp.	A	V	52.2
Vitis sp.	A	S	59.6
Vitis sp.	A	R	87.8
Xanthium sibiricum	A	S	57.1
Zea mays	A	V	26.1
Zea mays	A	W	32.1
Zea Mays	A	O	38.7
Achillea millefolium	G	S	45.5
Aconitum napellus	G	S	24.0
Aconitum napellus	G	O	53.9
Acorus calamus	G	O	87.6
Acorus calamus	G	S	100.0
Actinidia arguta	G	S	33.8
Adiantum pedatum	G	R	31.8
Adiantum pedatum	G	S	31.7
Ageratum conyzoides	G	S	23.1
Agropyron cristatum	G	R	64.1
Agropyron repens	G	S	29.2
Agropyron repens	G	O	32.6
Agrostis Stolonifera	G	R	34.4

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
<i>Alcea rosea</i>	G	S	22.7
<i>Alchemilla mollis</i>	G	S	30.5
<i>Alchemilla mollis</i>	G	W	33.2
<i>Allium ampeloprasum</i>	G	O	53.4
<i>Allium cepa</i>	G	S	22.5
<i>Allium cepa</i>	G	O	60.7
<i>Allium schoenoprasum</i>	G	S	21.1
<i>Allium schoenoprasum</i>	G	O	60.4
<i>Allium tuberosum</i>	G	S	38.8
<i>Allium tuberosum</i>	G	O	74.4
<i>Athaea officianalis</i>	G	S	54.9
<i>Amaranthus candathus</i>	G	O	42.6
<i>Amaranthus caudatus</i>	G	W	27.1
<i>Amaranthus gangeticus</i>	G	S	56.8
<i>Amaranthus gangeticus</i>	G	S	74.4
<i>Ambrosia artemisiifolia</i>	G	R	48.0
<i>Amelanchier sanguinea</i>	G	W	45.2
<i>Angelica archangelica</i>	G	S	20.9
<i>Anthemis nobilis</i>	G	R	58.9
<i>Apium graveolens</i>	G	O	30.4
<i>Apium graveolens</i>	G	S	36.4
<i>Apium graveolens</i>	G	R	60.6
<i>Arachis hypogaea</i>	G	W	26.0
<i>Aralia cordata</i>	G	S	66.0
<i>Arctium minus</i>	G	O	26.6
<i>Arctium minus</i>	G	R	30.8
<i>Arctostaphylos uva-ursi</i>	G	S	29.3
<i>Arctostaphylos uva-ursi</i>	G	O	38.8
<i>Arctostaphylos uva-ursi</i>	G	R	80.2
<i>Armoracia rusticana</i>	G	S	62.7
<i>Aronia melanocarpa</i>	G	O	26.7
<i>Aronia melanocarpa</i>	G	V	100.0
<i>Aronia melanocarpa</i>	G	R	100.0
<i>Aronia melanocarpa (Michx.) Ell.</i>	G	W	39.1
<i>Artemisia dracunculifolia</i>	G	O	44.3
<i>Artemisia dracunculifolia</i>	G	S	65.4
<i>Asclepias incarnata</i>	G	R	20.3
<i>Asparagus officinalis</i>	G	O	22.3
<i>Asparagus officinalis</i>	G	S	26.6
<i>Asparagus officinalis</i>	G	W	28.7
<i>Aster sp</i>	G	O	34.3
<i>Aster sp</i>	G	R	62.6
<i>Atropa belladonna</i>	G	S	34.9
<i>Beta vulgaris</i>	G	R	28.3
<i>Beta vulgaris</i>	G	R	42.2
<i>Beta vulgaris</i>	G	O	47.0
<i>Beta vulgaris spp. Maritima</i>	G	O	48.7
<i>Brassica capitata</i>	G	R	26.7
<i>Brassica capitata</i>	G	S	68.3

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Brassica juncea	G	O	45.0
Brassica juncea	G	S	66.1
Brassica Napus	G	S	27.5
Brassica Napus	G	R	37.6
Brassica napus	G	O	94.8
Brassica nigra	G	S	36.4
Brassica oleracea	G	R	38.7
Brassica oleracea	G	W	39.0
Brassica oleracea	G	R	49.4
Brassica oleracea	G	S	76.1
Brassica oleracea	G	O	100.0
Brassica rapa	G	R	21.1
Brassica rapa	G	S	64.0
Brassica rapa	G	O	100.0
Bromus inermis	G	R	36.7
Campanula rapunculus	G	O	59.9
Canna edulis	G	O	20.8
Canna edulis	G	O	83.1
Capsicum annuum	G	R	20.2
Capsicum annuum	G	S	29.6
Capsicum annuum	G	O	51.5
Capsicum annuum	G	S	60.8
Capsicum frutescens	G	S	32.8
Carthamus tinctorius	G	R	29.8
Carum carvi	G	S	30.4
Chelidonium majus	G	O	39.9
Chenopodium bonus-henricus	G	O	63.0
Chenopodium quinoa	G	O	34.1
Chenopodium quinoa	G	W	42.8
Chenopodium quinoa	G	V	48.1
Chichorium endivia subsp endivia	G	W	22.0
Chichorium endivia subsp endivia	G	S	22.9
Chrysanthemum coronarium	G	R	23.2
Chrysanthemum coronarium	G	S	68.4
Chrysanthemum leucanthemum	G	R	20.5
Cicer arietinum	G	S	25.7
Cichorium intybus	G	W	51.1
Cichorium intybus	G	S	53.4
Citrullus lanatus	G	S	36.5
Citrullus lanatus	G	O	71.5
Coix Lacryma-Jobi	G	O	21.0
Cornus canadensis	G	S	34.8
Crataegus sp	G	W	54.0
Crataegus submollis	G	S	31.3
Cryptotaenia canadensis	G	W	32.1
Cucumis anguria	G	S	27.3
Cucumis anguria	G	O	32.5
Cucumis sativus	G	O	39.4
Cucumis sativus	G	S	69.4
Cucurbita maxima	G	O	34.1



Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Cucurbita maxima	G	S	42.6
Cucurbita moschata	G	S	32.0
Cucurbita moschata	G	O	39.2
Cucurbita pepo	G	S	28.8
Cucurbita pepo	G	O	32.6
Curcuma zedoaria	G	O	23.3
Curcuma zedoaria	G	S	57.8
Cymbopogon citratus	G	O	70.1
Cynara scolymus	G	S	20.2
Cynara scolymus	G	O	37.5
Cynara scolymus	G	R	88.7
Cyperus esculentus	G	S	68.7
Datura metel	G	S	29.2
Datura stramonium	G	O	27.6
Daucus carota	G	O	24.2
Daucus carota	G	R	29.3
Dipsacus sativus	G	S	48.7
Dirca palustris	G	O	29.9
Dirca palustris	G	S	36.4
Dolichos Lablab	G	S	35.8
Dolichos Lablab	G	R	74.5
Dryopteris filix-mas	G	S	27.9
Dryopteris filix-mas	G	R	42.6
Echinochloa frumentacea	G	O	68.4
Eleusine coracana	G	O	47.8
Elymus junceus	G	R	42.7
Erigeron canadensis	G	S	37.8
Erigeron speciosus	G	R	34.6
Errihenatherum elatius	G	R	34.4
Fagopyrum tartaricum	G	W	31.4
Foeniculum vulgare	G	W	28.0
Foeniculum vulgare	G	S	44.6
Foeniculum vulgare	G	O	68.9
Foeniculum Vulgare	G	R	100.0
Forsythia intermedia	G	O	100.0
Forsythia x intermedia	G	O	79.5
Galium odoratum	G	S	32.4
Galium odoratum	G	R	100.0
Gaultheria hispidula	G	R	48.4
Gaultheria hispidula	G	S	80.4
Gaultheria hispidula	G	O	100.0
Gaultheria procumbens	G	S	26.9
Gaultheria procumbens	G	W	54.3
Glechoma hederacea	G	S	26.6
Glycine max	G	R	52.5
Glycine max	G	O	67.9
Glycine max	G	O	75.8
Glycyrrhiza glabra	G	R	21.4
Glycyrrhiza glabra	G	V	21.6

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Glycyrrhiza glabra	G	W	100.0
Gulzotia abyssinica	G	R	91.4
Hamamelis virginiana	G	O	39.8
Hamamelis virginiana	G	R	78.8
Hamamelis virginiana	G	S	98.6
Hedeoma pulegioides	G	S	45.4
Helentium hoopesii	G	S	22.6
Helentium hoopesii	G	O	52.8
Helianthus annuus	G	R	22.0
Helianthus annuus	G	S	31.8
Helianthus strumosus	G	R	30.5
Helianthus strumosus	G	O	71.7
Helianthus tuberosus	G	W	21.2
Helianthus tuberosus	G	S	50.7
Helianthus tuberosus L.	G	R	24.9
Heliotropium arborescens	G	S	40.0
Heliotropium arborescens	G	O	45.6
Helleborus niger	G	S	38.0
Hordeum vulgare	G	S	21.5
Humulus lupulus	G	O	35.1
Hypericum sp	G	W	26.1
Hyssopus officinalis	G	S	74.5
Iberis amara	G	O	20.9
Iberis amara	G	S	21.7
Inula helenium	G	S	27.6
Ipomoea batatas	G	S	37.5
Isatis tinctoria	G	S	48.0
Lachica serrola	G	R	53.0
Lactuca sativa	G	W	24.5
Laportea canadensis	G	S	36.0
Laportea canadensis	G	O	81.7
Lathyrus sativus	G	W	37.8
Lathyrus sylvestris	G	R	40.7
Lathyrus sylvestris	G	O	78.1
Laurus nobilis	G	S	22.7
Lavandula angustifolia	G	S	31.7
Lavandula latifolia	G	O	27.2
Ledum groenlandicum	G	S	61.1
Leonurus cardiaca	G	O	22.6
Lepidium sativum	G	S	23.3
Levisticum officinale	G	S	23.1
Levisticum officinale	G	W	27.5
Levisticum officinale	G	O	41.3
Linum usitatissimum	G	R	21.4
Lolium perenne	G	R	32.7
Lotus corniculatus	G	R	54.2
Malus hupehensis	G	R	28.4
Malva verticillata	G	R	37.9

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Matricaria recutita	G	O	50.3
Medicago sativa	G	W	29.1
Medicago sativa	G	R	52.1
Melissa officinalis	G	O	22.7
Melissa officinalis	G	S	35.9
Melissa officinalis	G	R	38.6
Mentha piperita	G	S	64.4
Mentha suaveolens	G	W	22.5
Momordica charantia	G	R	29.3
Momordica charantia	G	S	90.6
Nepeta cataria	G	R	50.5
Nicotiana rustica	G	O	35.3
Nicotiana rustica	G	S	100.0
Nicotiana tabacum	G	S	31.6
Nicotiana tabacum	G	O	100.0
Nigella arvensis	G	R	24.2
Ocimum basilicum	G	S	30.6
Oenothera biennis	G	O	48.0
Oenothera biennis	G	R	76.6
Origanum vulgare	G	V	41.3
Oryza sativa	G	O	22.1
Oxyria digyna	G	O	26.5
Oxyria digyna	G	V	70.3
Panicum miliaceum	G	O	94.4
Pastinaca sativa	G	R	29.4
Pastinaca sativa	G	S	79.2
Pennisetum alopecuroides	G	O	22.0
Petasites japonicus	G	S	29.2
Peucedanum oreoselinum	G	O	21.3
Phacelia tanacetifolia	G	R	23.5
Phalaris arundinacea	G	R	47.5
Phalaris canariensis	G	R	23.1
Phalaris canariensis	G	O	100.0
Phaseolus coccineus	G	O	37.0
Phaseolus coccineus	G	R	74.1
Phaseolus mungo	G	O	42.2
Phaseolus mungo	G	S	52.2
Phaseolus vulgaris	G	V	35.5
Phaseolus vulgaris	G	S	48.0
Phaseolus vulgaris	G	O	58.1
Phlox paniculata	G	S	32.2
Phlox paniculata	G	O	40.1
Physalis ixocarpa	G	O	20.8
Physalis pruinosa	G	O	80.0
Phytolacca americana	G	S	62.0
Phytolacca americana	G	O	100.0
Pimpinella anisum	G	S	37.3

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Pisum sativum	G	W	34.4
Pisum sativum	G	O	63.3
Plantago coronopus	G	O	42.7
Plantago coronopus	G	S	46.4
Plantago major	G	O	28.3
Plantago major	G	S	41.4
Plectranthus sp.	G	S	29.3
Poa compressa	G	R	22.1
Poa compressa	G	S	45.5
Poa pratensis	G	R	35.7
Polygonum pensylvanicum	G	S	38.3
Polygonum persicaria	G	S	31.0
Potentilla anserina	G	O	46.8
Poterium sanguisorba	G	S	24.7
Poterium sanguisorba	G	W	30.6
Prunus cerasifera	G	R	45.9
Pteridium aquilinum	G	S	22.4
Raphanus Raphanistrum	G	S	36.5
Raphanus Raphanistrum	G	O	75.0
Raphanus sativus	G	R	20.8
Raphanus sativus	G	R	27.5
Raphanus sativus	G	S	35.4
Rheum rhabarbarum	G	S	27.0
Ribes Grossularia	G	W	33.7
Ribes nidigrolaria	G	S	30.7
Ribes nidigrolaria	G	V	40.5
Ribes nigrum	G	V	35.9
Ribes nigrum	G	W	58.6
Ribes Silvestris	G	V	26.9
Ribes Silvestris	G	W	100.0
Ricinus communis	G	R	21.8
Rosmarinus officinalis	G	S	24.7
Rosmarinus officinalis	G	W	30.9
Rosmarinus officinalis	G	R	60.3
Rubus idaeus	G	O	32.5
Rubus idaeus	G	S	47.0
Rubus occidentalis	G	S	39.4
Rubus occidentalis	G	R	74.1
Rumex acetosa	G	W	45.6
Rumex acetosella	G	W	22.8
Rumex acetosella	G	V	31.5
Rumex crispus	G	O	25.9
Rumex crispus	G	R	70.3
Rumex patientia	G	O	39.8
Rumex patientia	G	S	54.2
Rumex scutatus	G	W	23.8
Rumex scutatus	G	V	69.9
Rumex scutatus	G	O	78.8
Ruta graveolens	G	R	30.7

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Ruta graveolens	G	S	61.5
Salvia elagens	G	W	25.4
Salvia elegans	G	S	31.1
Sambucus canadensis	G	W	80.6
Sambucus ebulus	G	W	26.1
Sambucus ebulus	G	V	34.4
Sambucus ebulus	G	S	37.8
Sanguisorba officinalis	G	R	100.0
Santolina chamaecyparissus	G	R	21.7
Santolina chamaecyparissus	G	S	25.2
Satureja montana	G	O	21.2
Scutellaria lateriflora	G	S	37.0
Secale cereale	G	S	26.7
Secale cereale	G	W	27.3
Serratula tinctoria	G	S	36.2
Serratula tinctoria	G	O	70.3
Sesamum indicum	G	O	27.6
Sesamum indicum	G	S	44.3
Silybum marianum	G	S	34.7
Sium sisarum	G	O	79.0
Solanum dulcamara	G	R	25.2
Solanum dulcamara	G	S	64.6
solanum melongena	G	S	36.6
solanum melongena	G	O	40.1
solanum melongena	G	V	50.0
solanum melongena	G	S	74.9
Solanum tuberosum	G	S	39.1
Solanum tuberosum	G	O	39.2
Solidago sp	G	R	30.7
Sorghum caffrorum	G	O	87.9
Sorghum dochna	G	W	20.6
Sorghum dochna	G	O	20.6
Sorghum dochna	G	S	34.1
Sorghum dochna	G	O	97.0
Sorghum dochna	G	O	30.6
Sorghum durra	G	S	30.6
sorghum durra	G	O	48.0
sorghum durra	G	S	21.7
Sorghum sudanense	G	O	24.6
Sorghum sudanense	G	V	32.1
Sorghum sudanense	G	S	53.2
Spinacia oleracea	G	S	25.0
Stachys Affinis	G	R	27.8
Stachys Affinis	G	O	100.0
Stachys Affinis	G	W	21.7
Symphytum officinale	G	O	25.2
Symphytum officinale	G	S	34.6
Tanacetum cinerarifolium	G	R	52.4

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Tanacetum vulgare	G	R	27.1
Tanacetum vulgare	G	S	72.7
Teucrium chamaedrys	G	R	24.6
Teucrium chamaedrys	G	O	52.8
Thymus fragrantissimus	G	R	100.0
Thymus vulgaris	G	V	24.2
Thymus x citriodorus	G	S	23.7
Tiarella cordifolia	G	S	20.8
Tiarella cordifolia	G	O	30.8
Tragopogon pterisifolius	G	O	22.8
Trifolium hybridum	G	R	24.7
Trifolium pannonicum	G	R	65.5
Trifolium repens	G	R	57.5
Trigonella foenumgraecum	G	S	37.6
Triticum fergidum	G	S	56.5
Triticum spelta	G	S	40.8
Tropaeolum majus	G	O	76.1
Typha latifolia	G	S	43.3
Urtica dioica	G	S	40.3
Vaccinium angustifolium	G	S	42.4
Vaccinium corymbosum	G	S	61.5
Vaccinium macrocarpon	G	S	43.7
Vaccinium angustifolium	G	R	23.1
Veratrum viride	G	S	43.6
Verbascum thapsus	G	S	37.8
Verbascum thapsus	G	O	87.0
Veronica officinalis	G	S	30.5
Viburnum trilobum	G	S	49.4
Viburnum trilobum	G	R	100.0
Viburnum trilobum	G	V	100.0
Vicia faba	G	R	50.5
Vicia sativa	G	R	42.4
Vicia villosa	G	R	89.2
Vigna angularis	G	R	28.1
Vigna angularis	G	S	71.5
Vigna unguiculata	G	R	21.0
Vigna unguiculata	G	O	38.7
Vigna unguiculata	G	S	61.1
Vinca minor	G	O	33.6
Vinca minor	G	S	34.3
Vitis sp.	G	O	29.0
Vitis sp.	G	W	50.2
Vitis sp.	G	S	53.3
Vitis sp.	G	V	63.0
Vitis sp.	G	R	86.6
Withania somnifera	G	S	20.3
Xanthium sibiricum	G	S	34.7

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Xanthium strumarium	G	S	23.2
Zea mays	G	V	20.1
Zea mays	G	S	45.9
Zea mays	G	O	97.5
Abelmoschus esculentus	T	S	24.8
Abies lasiocarpa	T	W	44.7
Achillea millefolium	T	O	24.1
Achillea millefolium	T	S	59.2
Aconitum napellus	T	S	40.6
Aconitum napellus	T	O	41.6
Acorus calamus	T	O	47.1
Actinidia arguta	T	S	21.8
Adiantum pedatum	T	S	26.8
Adiantum pedatum	T	O	45.8
Adiantum pedatum	T	R	86.0
Agaricus bisporus	T	S	26.3
Agaricus bisporus	T	O	29.8
Agaricus bisporus	T	W	36.9
Agaricus bisporus	T	W	44.0
Agaricus bisporus	T	S	46.0
Agastache foeniculum	T	S	70.0
Ageratum conyzoides	T	S	31.7
Agropyron cristatum	T	R	86.9
Agropyron repens	T	O	49.6
Agrostis alba	T	R	21.9
Agrostis Stolonifera	T	R	35.8
Alcea rosea	T	S	35.2
Alchemilla mollis	T	S	37.9
Allium ampeloprasum	T	O	48.0
Allium ascalonicum	T	S	28.2
Allium ascalonicum	T	O	77.2
Allium cepa	T	O	92.6
Allium grande	T	R	60.4
Allium schoenoprasum	T	O	65.8
Allium schoenoprasum	T	W	31.0
Allium tuberosum	T	S	22.8
Allium tuberosum	T	O	99.7
Althaea officinalis	T	S	22.8
Althaea officinalis	T	O	22.1
Amaranthus candathus	T	W	43.9
Amaranthus gangeticus	T	O	30.3
Amaranthus gangeticus	T	S	66.0
Ambrosia artemisiifolia	T	R	58.7
Amelanchier alnifolia	T	R	70.5
Amelanchier sanguinea	T	W	37.3
Ananas comosus	T	W	23.8
Ananas comosus	T	V	95.0
Ananas comosus	T	O	99.8
angelica archangelica	T	S	30.5

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
angelica archangelica	T	R	38.9
Anthemis nobilis	T	O	41.4
Anthemis nobilis	T	R	72.8
Anthemis tinctorium	T	S	27.3
Anthriscus cerefolium	T	W	35.8
Apium graveolens	T	S	31.7
Apium graveolens	T	W	32.4
Apium graveolens	T	R	56.6
Aralia cordata	T	R	29.2
Aralia cordata	T	S	45.0
Arctium minus	T	R	25.8
Arctostaphylos uva-ursi	T	O	31.0
Arctostaphylos uva-ursi	T	S	35.2
Arctostaphylos uva-ursi	T	R	58.6
Amoracia rusticana	T	W	24.9
Amoracia rusticana	T	S	52.9
Aronia melanocarpa	T	W	40.0
Aronia melanocarpa	T	V	91.9
Aronia prunifolia	T	W	100.0
Arrhenatherum elatius	T	R	22.8
Artemisia draculus	T	S	74.9
Artemisia dracunculus	T	S	47.8
Asclepias incarnata	T	R	20.5
Ascltinidia chinensis	T	V	43.4
Ascltinidia chinensis	T	O	66.4
Asparagus officinalis	T	O	91.3
Asparagus officinalis	T	R	23.3
Asparagus officinalis	T	S	44.7
Aster Linné	T	S	47.5
Aster sp	T	R	62.0
Atriplex hortensis	T	R	54.8
Atropa belladonna	T	R	20.1
Atropa belladonna	T	S	51.0
Avena sativa	T	R	24.8
Avena sativa	T	W	26.4
Averrhoa carambola	T	W	23.4
Ayperus esculentus	T	S	46.2
Beta vulgaris	T	R	28.2
Beta vulgaris	T	S	30.4
Beta vulgaris	T	O	56.8
Beta vulgaris spp. Maritima	T	R	23.6
Betula glandulosa	T	O	22.2
Betula glandulosa	T	V	22.2
Betula glandulosa	T	S	25.7
Betula glandulosa	T	W	32.9
Boletus edulis	T	S	36.2
Boletus edulis	T	O	90.2



Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Borago officinalis	T	S	27.9
Borago officinalis	T	O	76.1
Brassica cepticepa	T	O	65.4
Brassica cepticepa	T	S	71.5
Brassica Chineusis	T	R	27.1
Brassica juncea	T	O	51.0
Brassica juncea	T	R	68.0
Brassica juncea	T	S	74.1
Brassica Napus	T	S	22.0
Brassica Napus	T	R	34.0
Brassica Napus	T	O	100.0
Brassica nigra	T	S	26.7
Brassica nigra	T	O	27.4
Brassica nigra	T	R	82.5
Brassica oleracea	T	O	21.2
Brassica oleracea	T	S	22.1
Brassica oleracea	T	W	26.2
Brassica oleracea	T	R	27.2
Brassica oleracea	T	O	31.3
Brassica oleracea	T	W	46.5
Brassica oleracea	T	S	71.2
Brassica oleracea	T	O	93.5
Brassica rapa	T	R	25.6
Brassica rapa	T	R	33.9
Brassica rapa	T	R	58.0
Brassica rapa	T	S	69.7
Brassica rapa	T	O	100.0
Bromus inermis	T	R	57.3
Campanula rapunculus	T	O	77.5
Canna edulis	T	O	75.6
Cantharellus cibarius	T	O	52.5
Capsella bursa-pastoris	T	O	35.9
Capsicum annus	T	S	43.9
Capsicum annuum	T	S	50.1
Capsicum frutescens	T	S	28.9
Carica papaya	T	W	31.1
Carthamus tinctorius	T	R	37.3
Carum carvi	T	S	30.1
Castanea spp.	T	W	21.7
Chaerophyllum bulbosum	T	S	46.0
Chamaemelum nobile	T	W	36.8
Chamaemelum nobile	T	W	48.4
Chelidonium majus	T	O	46.6
Chenopodium bonus-henricus	T	R	22.4
Chenopodium bonus-henricus	T	S	57.6
Chenopodium quinoa	T	V	35.5
Chenopodium quinoa	T	W	54.4
Chrysanthemum leucanthemum	T	R	26.5

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
<i>Chrysanthemum coronarium</i> (Chp suey)	T	R	48.4
<i>Chrysanthemum coronarium</i>	T	R	38.2
<i>Chrysanthemum coronarium</i>	T	S	63.9
<i>Cicer arietinum</i>	T	S	20.0
<i>Cichorium endivia</i>	T	S	25.6
<i>Cichorium endivia crispa</i>	T	O	38.4
<i>Cichorium litybus</i>	T	S	30.2
<i>Cimicifuga racemosa</i>	T	S	33.7
<i>Citrullus colocynthis</i>	T	S	20.4
<i>Citrullus lanatus</i>	T	O	68.3
<i>Citrullus lanatus</i>	T	S	31.9
<i>Citrus limetoides</i>	T	W	20.4
<i>Citrus limetoides</i>	T	V	37.5
<i>Citrus limon</i>	T	V	47.7
<i>Citrus limon</i>	T	O	72.4
<i>Citrus paradisi</i>	T	W	23.8
<i>Citrus paradisi</i>	T	V	33.4
<i>Citrus reticulata</i>	T	V	20.4
<i>Citrus reticulata</i>	T	V	20.9
<i>Citrus reticulata</i>	T	W	26.0
<i>Citrus reticulata</i>	T	S	40.4
<i>Citrus reticulata</i>	T	O	50.0
<i>Citrus reticulata</i>	T	O	79.2
<i>Citrus sinensis</i>	T	W	25.3
<i>Citrus sinensis</i>	T	V	59.8
<i>Cobx Lacryma-Jobi</i>	T	W	20.0
<i>Corchorus olitorius</i>	T	S	38.9
<i>Cornus canadensis</i>	T	S	35.6
<i>Cosmos sulphureus</i>	T	S	51.4
<i>Crataegus sp</i>	T	V	28.0
<i>Crataegus sp</i>	T	R	60.9
<i>Crataegus submolli</i>	T	O	25.5
<i>Criihum maritima</i>	T	S	50.8
<i>Cryptotaenia canadensis</i>	T	O	21.2
<i>Cryptotaenia canadensis</i>	T	W	26.0
<i>Cryptotaenia canadensis</i>	T	V	40.0
<i>Cucumis anguria</i>	T	S	38.7
<i>Cucumis anguria</i>	T	O	46.6
<i>Cucumis melo</i>	T	S	30.3
<i>Cucumis melo</i>	T	O	46.2
<i>Cucumis metuliferus</i>	T	W	32.0
<i>Cucumis sativus Fanfare</i>	T	O	40.3
<i>Cucurbita maxima</i>	T	S	23.6
<i>Cucurbita maxima</i>	T	S	33.1
<i>Cucurbita maxima</i>	T	O	55.2
<i>Cucurbita moschata</i>	T	S	20.1
<i>Cucurbita moschata</i>	T	S	26.7
<i>Cucurbita moschata</i>	T	O	41.7
<i>Cucurbita pepo</i>	T	S	41.9

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Cucurbita pepo	T	O	82.9
Curcuma zedoaria	T	S	100.0
Cydonia oblonga	T	W	42.9
Cynara scolymus	T	R	51.6
Cynara scolymus	T	S	60.9
Dactylis Glomerata	T	R	25.7
Datura stramonium	T	R	21.9
Daucus carota	T	R	25.9
Dioscorea batatas	T	O	47.6
Dioscorea batatas	T	O	83.1
Diospiros Kaki	T	W	34.9
Dirca palustris	T	S	27.6
Dirca palustris	T	O	90.4
Dolichus lablab	T	R	66.4
Dolichus lablab	T	O	85.3
Dryopteris filix-mas	T	S	21.9
Dryopteris filix-mas	T	R	77.9
Echinacea purpurea	T	S	48.6
Eleusine coracana	T	O	45.2
Elymus junceus	T	R	41.0
Erigeron canadensis	T	S	31.4
Eriobotrya japonica	T	W	28.3
Eruca vesicaria	T	R	44.9
Fagopyrum esculentum	T	W	76.7
Fagopyrum tartaricum	T	W	42.6
Festuca rubra	T	R	29.6
Festuca rubra	T	S	42.9
Foeniculum vulgare	T	V	22.1
Foeniculum vulgare	T	S	21.6
Foeniculum vulgare	T	O	84.8
Forsythia intermedia	T	O	70.8
Forsythia x intermedia	T	O	60.2
Fortunella spp.	T	S	35.7
Fortunella spp	T	W	50.7
Fortunella spp	T	O	74.5
Fortunella spp	T	W	24.8
Fragaria	T	V	52.4
Fragaria	T	O	100.0
Fragaria x ananassa	T	S	29.3
Galium odoratum	T	R	26.0
Gaultheria hispidula	T	W	40.3
Ginkgo biloba	T	V	27.0
Ginkgo biloba	T	W	68.9
Glechoma hederacea	T	R	20.4
Glechoma hederacea	T	S	30.4
Glycine max	T	O	28.6
Glycine max	T	R	47.4
Glycine max	T	S	82.0
Glycyrrhiza glabra	T	S	35.4
Glycyrrhiza glabra	T	O	40.5

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Glycyrrhiza glabra	T	W	100.0
Gossypium herbaceum	T	S	36.1
Guizotia abyssinica	T	R	28.9
Guizotia abyssinica	T	S	40.4
Hamamelis virginiana	T	O	52.4
Hamamelis virginiana	T	S	67.5
Hamamelis virginiana	T	R	84.1
Hedeoma pulegioides	T	S	57.4
Helenium hoopesii	T	O	33.7
Helenium hoopesii	T	S	49.0
Helianthus annuus	T	S	63.4
Helianthus strumosus	T	R	20.3
Helianthus strumosus	T	O	71.7
Helianthus tuberosa	T	W	22.8
Helianthus tuberosus L.	T	V	22.6
Helianthus tuberosus L.	T	S	55.0
Helichrysum angustifolium	T	S	67.0
Heliotropium arborescens	T	S	58.9
Helleborus niger	T	S	31.9
Hibiscus cannabinus	T	S	48.9
Hordeum vulgare	T	S	29.2
Humulus lupulus	T	W	22.4
Humulus lupulus	T	R	39.1
Humulus lupulus	T	O	63.1
Humulus lupulus	T	S	100.0
Hydrastis canadensis	T	S	20.2
Hydrastis canadensis	T	W	31.0
Hyoscyamus niger	T	O	56.8
Hypericum henryi	T	O	48.8
Hypericum perforatum	T	S	48.1
Hypericum perforatum	T	O	63.7
Hypomyces lactiflorum	T	S	44.8
Hypomyces lactiflorum	T	O	60.9
Hyssops officinalis	T	W	22.9
Inula helenium	T	S	24.6
Juniperus communis	T	S	33.0
Juniperus communis	T	O	38.2
Lactuca sativa	T	S	44.5
Lactuca sativa	T	R	60.7
Laportea canadensis	T	S	30.2
Lathyrus Sativus	T	O	20.4
Lathyrus Sativus	T	R	52.5
Lathyrus sylvestris	T	W	27.7
Lathyrus sylvestris	T	O	36.8
Laurus nobilis	T	S	52.0
Lavendula angustifolia	T	W	26.4
Lavendula angustifolia	T	S	53.2
Lavendula latifolia	T	S	51.3

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Ledum groenlandicum	T	S	44.4
Lentinus edodes	T	W	42.1
Lentinus edodes	T	O	100.0
Lepidium sativum	T	S	44.2
Levisticum officinale	T	S	20.8
Levisticum officinale	T	O	39.4
Linum usitatissimum	T	R	42.3
Litchi chinensis	T	W	25.7
Lofium multiflorum	T	S	20.6
Lolium perenne	T	R	28.7
Lonicera ramosissima	T	S	28.3
Lonicera ramosissima	T	O	40.4
Lonicera ramosissima	T	W	53.2
Lonicera syringantha	T	W	95.8
Lotus corniculatus	T	R	100.0
Lotus tetragonolobus	T	S	65.4
Lunaria annua	T	O	55.7
Lunaria annua	T	S	67.3
Lycopersicon esculentum	T	R	37.6
Malus	T	W	31.8
Malus	T	V	44.4
Malus hupehensis (Pamp.) Rehd.	T	R	26.3
Malus hupehensis (Pamp.) Rehd.	T	S	67.0
Malus sp.	T	R	65.3
Malva moschata	T	S	41.1
Malva sylvestris	T	S	38.4
Malva sylvestris	T	O	47.4
Malva verticillata	T	R	42.7
Mangifera indica	T	O	30.6
Manihot esculenta syn. M. utilissima	T	W	38.3
Manihot esculenta syn. M. utilissima	T	S	50.4
Manihot esculenta syn. M. utilissima	T	O	88.5
Melilotus alba	T	R	30.4
Melilotus officinalis	T	R	68.1
Melissa officinalis	T	S	33.7
Melissa officinalis	T	O	34.7
Mentha arvensis	T	R	53.7
Mentha suaveolens	T	S	26.8
Menyanthes trifoliata	T	S	32.8
Miscanthus sinensis Andress	T	R	22.7
Momordica charantia	T	S	55.5
Monarda didyma	T	S	26.8
Monarda fistulosa	T	S	21.5
Montia perfoliata	T	R	28.6
Musa paradisiaca	T	W	29.0
nasturtium officinale	T	S	35.4
Nepeta cataria	T	W	26.5
Nepeta cataria	T	O	27.5
Nepeta cataria	T	S	41.9

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Nephetium longana ou Euphoria longana	T	W	43.4
Nicotiana rustica	T	O	26.0
Nicotiana rustica	T	S	32.7
Nicotiana tabacum	T	S	25.1
Nicotiana tabacum	T	O	77.7
Nigella sativa	T	R	59.3
Nigella sativa	T	R	100.0
Ocimum Basilicum	T	W	20.2
Ocimum Basilicum	T	V	20.2
Ocimum Basilicum	T	S	32.8
Oenothera biennis linné	T	R	100.0
Onobrychis viciifolia	T	R	45.0
Optunia sp.	T	W	33.4
Origanum marjorana	T	O	20.5
Origanum vulgare	T	O	20.8
Origanum vulgare	T	W	21.8
Oryza sativa	T	W	42.4
oxyria digyna	T	O	57.0
oxyria digyna	T	V	77.9
Panax quinquefolius L.	T	O	23.5
Panicum millaceum	T	W	36.5
Passiflora spp	T	S	35.8
Passiflora spp	T	V	38.3
Passiflora spp	T	W	48.2
Passiflora spp	T	O	100.0
Pastinaca sativa	T	O	21.7
Pastinaca sativa	T	R	38.6
Pastinaca sativa	T	S	39.2
Persea americana	T	V	32.5
Persea americana	T	O	38.6
Petasites Japonicus	T	S	26.2
Phalaris canariensis	T	O	80.0
Phaseolus coccineus	T	S	44.4
Phaseolus coccineus	T	R	79.1
Phaseolus mungo	T	S	27.0
Phaseolus mungo	T	O	37.9
Phaseolus vulgaris	T	R	20.1
Phaseolus vulgaris	T	S	51.9
Phaseolus vulgaris	T	O	61.7
Phlox paniculata	T	S	22.9
Phlox paniculata	T	O	44.5
Phoenix dactylifera	T	O	29.6
Physalis alkekengi	T	R	32.9
Physalis ixocarpa	T	R	26.6
Physalis ixocarpa	T	O	28.3
Physalis pruinosa	T	S	27.3
Physalis pruinosa	T	R	47.8
Physalis pruinosa	T	O	93.1
Physalis sp	T	W	39.1
Physalis sp	T	V	60.8

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Phytolacca americana	T	S	41.8
Phytolacca americana	T	O	100.0
Phytolacca decandra syn. P. americana	T	O	85.9
Pimpinella anisum	T	S	20.2
Pimpinella anisum	T	O	68.4
Pisum sativum	T	W	20.1
Pisum sativum	T	S	25.8
Pisum sativum	T	V	27.0
Pisum sativum	T	O	51.8
Plantago coronopus	T	R	21.9
Plantago coronopus	T	O	48.6
Plantago coronopus	T	S	66.8
Plantago major	T	S	35.1
Pleurotus spp	T	W	25.3
Pleurotus spp	T	S	59.3
Pleurotus spp	T	O	85.2
Poa compressa	T	R	26.2
Poa pratensis	T	O	21.5
Poa pratensis	T	R	30.0
Podophyllum peltatum	T	O	33.9
Podophyllum peltatum	T	S	50.2
Polygonum aviculare liné	T	R	31.0
Polygonum pennsylvanicum	T	S	56.6
Polygonum persicaria	T	S	20.1
Populus incrassata	T	W	54.9
Populus Tremula	T	W	31.0
Populus X petrowskyana	T	W	100.0
Potentilla anserina	T	S	22.1
Potentilla anserina	T	O	41.1
Prunus cerasus	T	V	30.1
Prunus persica	T	W	26.6
Prunus persica	T	V	38.5
Prunus spp	T	S	24.0
Prunus spp	T	V	49.1
Psidium guajaba	T	V	22.5
Psidium guajaba	T	W	44.3
Psidium guajaba	T	O	95.4
Psidium spp	T	S	36.6
Psidium spp	T	W	47.6
Psidium spp	T	O	87.8
Pteridium aquilinum	T	R	22.0
Punica granatum	T	V	52.1
Pyrus communis	T	V	39.5
Pyrus pyrifolia	T	W	33.7
Raphanus raphanistrum	T	O	24.5
Raphanus raphanistrum	T	S	44.8
Raphanus raphanistrum	T	S	46.1
Raphanus sativus	T	V	25.4
Raphanus sativus	T	R	32.1

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Raphanus sativus	T	W	38.1
Raphanus sativus	T	S	63.6
Raphanus sativus	T	O	93.4
Reseda luteola	T	S	22.5
Rhamnus frangula	T	S	34.2
Rhamnus frangula	T	R	39.6
Rheum officinale	T	S	100.0
Rheum palmatum	T	W	20.2
Rheum rhabarbarum	T	S	33.8
Rhus communis	T	S	20.9
Ribes nigrum	T	W	44.5
Ribes nigrum	T	V	53.1
Ribes nigrum	T	S	40.7
Ribes nigrum L.	T	W	50.0
Ribes nigrum L.	T	V	60.1
Ribes sativum syme	T	W	47.9
Ribes sativum	T	R	48.2
Ribes silvestre	T	V	26.3
Ribes silvestre	T	W	100.0
Ribes uva-crispa	T	O	57.5
Rosa rugosa	T	S	27.8
Rosa rugosa thunb.	T	W	37.5
Rosa rugosa thunb.	T	V	45.7
Rosmarinum officinale	T	R	44.2
Rosmarinum officinale	T	W	65.9
Rubus canadensis	T	S	45.5
Rubus idaeus	T	W	31.4
Rubus idaeus	T	V	57.2
Rubus idaeus	T	S	28.6
Rubus idaeus	T	O	38.0
Rubus occidentalis	T	O	21.4
Rubus occidentalis	T	S	36.5
Rubus occidentalis	T	R	60.2
Rubus occidentalis	T	O	84.5
Rumex scutatus	T	O	52.5
Rumex crispus linne	T	R	100.0
Rumex crispus linne	T	O	23.1
Rumex patientia	T	S	65.8
Rumex patientia	T	S	37.2
Ruta graveolens	T	V	34.4
Sabal serrulata syn. Serenoa repens	T	S	44.6
Sabal serrulata syn. Serenoa repens	T	R	67.8
Salix purpurea	T	O	61.1
Salvia (elegans)	T	S	44.8
Sambucus canadensis	T	O	72.4
Sambucus canadensis	T	W	67.8
Sambucus canadensis L.	T	V	44.3
Sambucus ebulus	T	R	100.0
Sanguisorba officinalis	T	R	37.9
Santolina	T	S	20.0
Satureja montana	T	S	20.0



Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Satureja montana	T	O	21.3
Satureja repandra	T	S	36.3
Scorzonera hipanica	T	R	27.1
Scorzonera hipanica	T	S	31.7
Scutellaria lateriflora	T	S	44.3
Secale cereale	T	S	24.2
Secale cereale	T	W	31.1
Sechium edule	T	S	37.8
Sesamum indicum	T	S	59.2
Setaria italica	T	W	33.0
Silybum marianum	T	O	92.4
Sium sisarum	T	O	32.7
Sium sisarum	T	S	33.1
Sium sisarum	T	O	81.3
Solanum melogena	T	O	21.9
solanum melogena	T	V	26.1
Solanum melogena	T	R	34.0
Solanum melogena	T	S	67.1
Solanum Tuberosum	T	O	68.6
Solidago canadensis	T	S	48.4
Solidago sp	T	R	31.4
Solidago virgaurea	T	S	56.2
Sorghum cafrorum	T	O	23.3
Sorghum dochna bicolor gr technicum	T	W	20.8
Sorghum dochna Snowdrew	T	S	21.4
Sorghum dochna Snowdrew	T	O	27.7
Spinacia oleracea	T	V	25.0
Spinacia oleracea	T	W	32.1
Spinacia oleracea	T	S	47.6
Spinacia oleracea	T	O	63.1
Stachys affinis	T	R	31.7
Stachys affinis	T	O	100.0
Stachys byzantina	T	W	30.9
Stipa capillata L.	T	R	20.1
Symphytum officinale	T	S	24.1
Tanacetum cinerariifolium	T	O	24.2
Tanacetum cinerariifolium	T	R	84.4
Tanacetum vulgare	T	R	25.7
Tanacetum vulgare	T	S	75.6
Taraxacum officinale (Red ribe)	T	S	21.1
Tepary	T	R	56.7
Teucrium chamaedrys L.	T	R	27.3
Thalps arvense	T	S	61.4
Thymus fragantissimus	T	R	100.0
Thymus herba-barona	T	W	22.0
Thymus pseudolanuginosus	T	R	36.8
Thymus pseudolanuginosus	T	S	37.1
Thymus serpyllum	T	S	26.0
Thymus serpyllum	T	W	42.7

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
Thymus X citriodorus	T	O	22.7
Tiarella cordifolia	T	R	100.0
Tragopogon porifolius	T	V	26.8
Tragopogon porifolius	T	O	28.4
Tragopogon porifolius	T	S	42.1
Tragopogon sp.	T	O	20.3
Tragopogon sp.	T	S	32.0
Tragopogon sp.	T	W	66.3
Trichosanthes kirilowii	T	O	66.5
Trifolium incarnatum	T	R	47.9
Trifolium repens	T	R	81.7
Trigonella foenum graecum	T	S	39.6
Triticale sp.	T	O	64.1
Triticum aestivum	T	W	24.5
Triticum aestivum	T	S	29.4
Triticum furgidum	T	S	35.8
Triticum spelta	T	S	34.7
Tropaeolum majus	T	O	90.3
Tropaeolum minus	T	W	20.1
Tsuga canadensis	T	O	21.5
Tsuga canadensis	T	W	64.4
Tsuga diversifolia	T	O	45.9
Tsuga diversifolia	T	W	100.0
Tsuga F. macrophylla	T	W	28.1
Typha latifolia L.	T	S	30.6
Urtica dioica	T	O	31.4
Urtica dioica	T	R	36.9
Urtica dioica	T	S	41.7
Vaccinium angustifolium	T	V	25.2
Vaccinium angustifolium	T	R	34.6
Vaccinium angustifolium	T	O	69.6
Vaccinium angustifolium	T	R	65.7
Vaccinium macrocarpon	T	O	30.2
Vaccinium macrocarpon	T	S	39.0
Vaccinium macrocarpon	T	S	56.9
Vaccinium macrocarpon	T	V	39.2
Vaccinium macrocarpon	T	W	42.3
Veratrum viride	T	O	20.5
Veratrum viride	T	S	33.1
Verbascum thapsus	T	S	43.1
Verbascum thapsus	T	O	70.2
Veronica officinalis	T	O	20.5
Viburnum trilobum Marsh.	T	S	40.6
Vicia faba	T	R	61.5
Vicia sativa	T	R	30.1
Vigna angularis	T	R	32.6
Vigna angularis	T	S	64.2
Vigna unguiculata	T	R	32.4
Vigna unguiculata	T	O	47.4

Table 4  
MMP-9

Nom latin	Stress	Extrait	Inhibition (%)
<i>Vigna unguiculata</i>	T	S	51.0
<i>Vinca minor</i>	T	S	21.3
<i>Vitis sp.</i>	T	V	28.3
<i>Vitis sp.</i>	T	O	29.4
<i>Vitis sp.</i>	T	S	45.4
<i>Vitis sp.</i>	T	V	50.7
<i>Vitis sp.</i>	T	W	61.8
<i>Vitis sp.</i>	T	R	100.0
<i>Weigela coracensis</i>	T	W	35.5
<i>Withania somnifera</i>	T	S	35.5
<i>Xanthium sibiricum</i>	T	S	38.8
<i>Xanthium strumarium</i>	T	S	33.5
<i>Zea mays</i>	T	S	37.1
<i>Zea mays</i>	T	O	65.5
<i>Zingiber officinale</i>	T	S	20.1
<i>Zingiber officinale</i>	T	W	58.9
<i>Zingiber officinale</i>	T	O	75.9

Table 6  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	61.9
Achillea tomentosa	A	O	60.8
Aconitum	A	O	38.6
Aconitum napellus	A	O	61.1
Alchemilla mollis	A	R	26.7
Allium	A	R	43.0
Allium cepa gr. Cepa	A	O	49.9
Allium cepa gr. Cepa	A	O	70.1
Allium cepa gr. Cepa	A	R	45.8
Allium sativum	A	O	25.6
Allium Tuberoseum	A	O	91.5
Allium Tuberoseum	A	O	75.0
Allium victorialis	A	O	31.1
Amaranthus gangeticus	A	O	26.1
Amaranthus gangeticus	A	O	29.0
Amelanchier canadensis	A	R	28.7
Anthemis tinctoria	A	O	26.8
Anthemis tinctoria	A	R	32.4
Anthoxanthum odoratum	A	O	24.9
Apium graveolens	A	O	31.1
Apium graveolens	A	O	20.6
Aralia cordata	A	R	52.3
Arctium lappa	A	O	33.7
Arctium lappa	A	R	33.0
Aronia melanocarpa (Michx.) Eil.	A	R	41.2
Aronia melanocarpa (Michx.) Eil.	A	O	21.6
Asarum europaeum	A	O	24.9
Athaea officinalis	A	O	57.7
Athyrium asperum	A	O	27.3
Atropa belladonna	A	O	37.7
Begonia convolvulacea	A	O	26.0
Begonia emini	A	O	34.2
Begonia glabra	A	O	38.9
Begonia Hannii	A	O	52.9
Begonia polygonoides	A	O	67.3
Berberis vulgaris	A	O	54.6
Beta vulgaris	A	R	39.9
Beta vulgaris	A	R	30.4
Beta vulgaris	A	O	61.9
Beta vulgaris	A	O	43.0
Beta vulgaris	A	R	91.0
Beta vulgaris	A	O	46.7
Beta vulgaris	A	R	65.3
Beta vulgaris	A	R	33.4
Beta vulgaris	A	O	54.3
Beta vulgaris	A	O	38.2
Beta vulgaris	A	R	55.9

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Beta vulgaris	A	R	28.5
Beta vulgaris	A	O	40.1
Beta vulgaris spp. Maritima	A	O	33.4
Brassica juncea	A	O	21.3
Brassica Oleracea	A	O	27.5
Brassica Oleracea	A	O	48.2
Brassica rapa	A	O	20.8
Calendula officinalis	A	O	35.6
Camellia sinensis syn. Thea sinensis	A	R	24.4
Cana edulis	A	R	100.0
Capsicum annuum	A	O	25.0
Capsicum frutescens	A	O	29.8
Chrysanthemum balsamita	A	O	89.3
Chrysanthemum balsamita	A	O	55.0
Chrysanthemum coronarium (Chp Suey)	A	O	30.1
Chrysanthemum coronarium (Chp Suey)	A	O	36.4
Cichorium intybus	A	R	100.0
Citrullus lanatus	A	O	24.4
Convallaria majalis	A	O	57.0
Coriandrum sativum	A	R	20.8
Cryptotaenia canadensis	A	O	20.4
Cucumis Anguria	A	O	26.8
Cucumis sativus	A	R	45.6
Curburbita pepo	A	O	30.8
Daucus carota	A	R	68.8
Daucus carota	A	O	20.3
Daucus carota	A	R	72.5
Daucus carota	A	O	22.8
Daucus carota	A	O	25.6
Daucus carota	A	R	65.9
Daucus carota	A	R	77.3
Daucus carota	A	R	41.6
Daucus carota	A	R	100.0
Dica palustris	A	R	41.4
Eruca vesicaria	A	O	65.0
Filipendula rubra	A	R	100.0
Forsythia intermedia	A	R	100.0
Forsythia x Intermedia	A	R	100.0
Geum rivale	A	O	26.4
Glycyrrhiza glabra	A	R	86.8
Heliotropium arborescens	A	O	29.5
Humulus Lupulus	A	O	65.4
Humulus Lupulus	A	R	100.0
Hylotelephium	A	R	23.7
Hypericum henryi	A	R	44.4
Iberis sempervirens	A	O	84.6
Jeffersonia diphylla	A	O	35.4
Ligularia dentata	A	O	30.3

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Lonicera ramosissima	A	R	48.7
Miscanthus sacchariflorus	A	O	50.9
Nicotiana tabacum	A	O	40.0
Nicotiana tabacum	A	O	56.8
Nicotiana tabacum	A	O	55.2
Nigella sativa	A	O	40.3
Origanum majorana	A	O	49.7
Origanum vulgare	A	O	67.0
Origanum vulgare	A	O	39.9
Panax quinquefolius L.	A	O	24.0
Pastinaca sativa	A	R	33.5
Petroselinum crispum	A	O	70.2
Peucedanum cervaria	A	O	21.5
Phaseolus Vulgaris	A	O	67.9
Philadelphus coronarius	A	O	24.0
Physostegia virginiana	A	O	56.9
Phytolacca americana	A	O	100.0
Plantago major	A	O	31.2
Plectranthus fruticosus	A	O	32.1
Polygonum pennsylvanicum	A	R	70.1
Pulmonaria saccharata	A	O	31.1
Raphanus sativus	A	O	21.5
Raphanus sativus	A	O	50.5
Raphanus sativus	A	O	58.9
Ribes nigrum L.	A	O	53.1
Rubus Allegheniensis	A	O	56.7
Rubus ideaus	A	R	89.0
Rumex crispus linné	A	R	65.2
Salvia elegans	A	O	32.6
Salvia nemorosa	A	O	26.2
Salvia officinalis	A	O	26.3
Salvia sclarea	A	R	51.6
Salvia sclarea	A	O	21.5
Saponaria officinalis	A	O	68.5
Satureja montana	A	O	47.6
Scorzonera hispanica	A	O	29.9
Sesamum indicum	A	O	84.8
Solanum dulcamara	A	O	51.3
Solidago canadensis	A	O	95.3
Solidago hybrida	A	O	94.6
Solidago hybrida	A	O	99.5
Solidago sp ?	A	O	60.9
Stellaria graminea linné	A	O	40.2
Tamarindus indica	A	O	59.2
Taraxacum officinale	A	O	88.6
Thalictrum aquilegifolium	A	O	65.2
Thalictrum Aquilegifolium	A	O	44.5

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
<i>Thuja occidentalis</i>	A	O	50.6
<i>Thymus praecox</i> subsp <i>arctius</i>	A	O	23.9
<i>Tiarella</i>	A	R	34.4
<i>Vaccinium angustifolium</i>	A	R	67.2
<i>Vaccinium macrocarpon</i>	A	R	37.1
<i>Vitis</i> sp.	A	R	93.7
<i>Xanthium strumarium</i>	A	O	83.2
<i>Yucca filamentosa</i>	A	O	34.5
<i>Zea mays</i>	A	O	29.7
<i>Zea mays</i>	A	O	93.2
<i>Achillea tomentosa</i>	G	O	41.0
<i>Adiantum tenerum</i>	G	R	30.2
<i>Alcea rosea</i>	G	O	37.7
<i>Alchemilla mollis</i>	G	R	32.8
<i>Allium schoenoprasum</i>	G	O	49.3
<i>Allium tuberosum</i>	G	O	79.1
<i>Allium tuberosum</i>	G	O	77.4
<i>Allium victorialis</i>	G	O	45.5
<i>Althaea officinalis</i>	G	O	67.2
<i>amaranthus gangeticus</i>	G	O	29.5
<i>Anaphalis margaritacea</i>	G	R	34.7
<i>Angelica dahurica</i>	G	R	27.9
<i>Anthemis nobilis</i>	G	O	42.3
<i>Apium graveolens</i>	G	O	25.7
<i>Apium graveolens</i>	G	O	27.4
<i>Arctostaphylos uva-ursi</i>	G	R	94.5
<i>Aronia melanocarpa</i>	G	R	74.5
<i>Aronia melanocarpa</i>	G	O	21.3
<i>Aronia melanocarpa</i> (Michx.) Eil.	G	R	79.9
<i>Aronia melanocarpa</i> (Michx.) Eil.	G	R	28.3
<i>Asarum europaeum</i>	G	O	55.4
<i>Atropa belladonna</i>	G	O	58.9
<i>Begonia emini</i>	G	O	24.7
<i>Begonia glabra</i>	G	O	42.9
<i>Begonia manii</i>	G	O	32.1
<i>Begonia polygorboides</i>	G	O	38.2
<i>Berberis vulgaris</i>	G	O	42.3
<i>Beta vulgaris</i>	G	R	75.3
<i>Beta vulgaris</i>	G	O	28.7
<i>Beta vulgaris</i>	G	O	21.7
<i>Beta vulgaris</i>	G	R	40.0
<i>Beta vulgaris</i> spp. <i>Maritima</i>	G	O	31.4
<i>Betula glandulosa</i>	G	R	38.5
<i>Calendula officinalis</i>	G	O	36.2
<i>Capsicum annuus</i>	G	O	49.9
<i>Chrysanthemum balsamita</i>	G	O	100.0
<i>Chrysanthemum balsamita</i>	G	O	33.1

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Cynara scolymus	G	O	51.9
Daucus carota	G	O	81.3
Daucus carota	G	O	27.2
Dirca palustris	G	R	100.0
Echinacea purpurea	G	O	22.9
Equisetum hyemale	G	O	100.0
Erigeron canadensis	G	O	73.3
Erigeron speciosus (Lindl.) D.C.	G	O	22.9
Eruca vesicaria	G	O	29.2
Erysimum perofskianum Fish. S.	G	O	89.8
Fenouil bronze	G	R	23.7
Filipendula rubra	G	R	93.2
Filipendula rubra	G	R	100.0
Filipendula ulmaria	G	O	20.5
Filipendula vulgaris	G	O	26.2
Forsythia intermedia	G	R	100.0
Forsythia x intermedia	G	R	100.0
Gafium odoratum	G	O	21.0
Gaultheria hispida (L.) Muhl	G	R	39.3
Gaultheria procumbens	G	R	43.4
Geum rivale	G	O	21.7
Glycine max	G	O	64.2
Glycyrrhiza glabra	G	R	53.4
Hamamelis virginiana	G	R	88.4
Heliotropium arborescens	G	O	23.0
Humulus lupulus	G	R	100.0
Humulus lupulus	G	O	90.2
Hydrastis canadensis	G	O	30.9
Hylotelephium	G	R	43.8
Hypericum henryi	G	R	50.3
Iberis sempervirens	G	O	87.7
Lathyrus sativus	G	R	25.9
Ligularia dentata	G	O	31.5
Lunaria annua	G	O	59.7
Lythrum salicaria	G	R	33.1
Melissa officinalis	G	O	27.6
Miscanthus sacchariflorus	G	O	30.7
Nicotiana rustica	G	O	54.8
Nicotiana tabacum	G	O	36.2
Nigella sativa	G	O	40.3
Origan	G	O	98.8
Origanum majorana	G	O	48.9
Panax quinquefolius L.	G	O	21.1
Panicum miliaceum	G	R	100.0
Passiflora caerulea	G	O	66.2
Petroselinum crispum	G	O	65.0
Phaseolus vulgaris	G	R	40.3



Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Physostegia virginiana	G	O	74.0
Phytolacca americana	G	O	100.0
Plantago major	G	O	60.9
Plectranthus fruticosus	G	O	29.2
Polygonum aviculare finné	G	R	45.6
Pongamia pinnata	G	O	41.7
Pulmonaria officinalis	G	O	36.9
Pulmonaria saccharata	G	O	24.7
Raphanus sativus	G	O	38.9
Raphanus sativus	G	O	86.4
Rhus aromatica	G	O	49.1
Ribes nigrum L.	G	O	20.6
Rubus idaeus	G	R	56.9
Rubus occidentalis	G	R	61.3
Saponaria officinalis	G	O	48.3
Sarriette vivace	G	O	44.6
Satureja repandra	G	O	72.3
Sesamum indicum	G	O	46.8
Sidalcea	G	O	55.2
Silene vulgaris	G	O	35.5
Solanum dulcamara	G	O	56.9
Solidago canadensis	G	O	99.8
Solidago canadensis	G	O	100.0
Solidago sp ?	G	O	71.8
Sorghum cafrorum	G	O	34.5
Tamarindus indica	G	O	65.4
Taraxacum officinale	G	O	82.7
taraxacum officinale	G	O	42.7
Tetradenia riparia	G	O	32.6
Thalictrum aquilegifolium	G	O	62.1
Thuja occidentalis	G	O	57.7
Thymus vulgaris "Argenteus"	G	O	40.7
Tiarella	G	R	39.0
Tropaeolum majus	G	O	36.6
Tussilago farfara	G	O	26.8
Vaccinium angustifolium	G	R	26.4
Vaccinium angustifolium	G	R	89.1
Vaccinium macrocarpon	G	R	33.9
Vitis sp.	G	R	100.0
Vitis sp.	G	R	90.9
Vitis sp.	G	O	37.1
Achillea millefolium	T	O	44.1
Aconitum napellus	T	O	27.4
Aesculus hippocastanum	T	R	84.2
Aesculus hippocastanum	T	O	47.3
Alcea rosea "Nigra"	T	O	24.3
Alchemilla mollis	T	R	24.9

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Allium ascalonicum	T	O	31.1
Allium cepa gr. Cepa	T	O	39.4
Allium cepa gr. Cepa	T	R	23.2
Allium cepa gr. Cepa	T	O	45.5
Allium fistulosum	T	O	21.9
Allium grande	T	O	39.5
Allium tuberosum	T	O	26.6
Allium tuberosum	T	O	33.1
Allium tuberosum	T	O	72.3
Allium tuberosum	T	R	22.6
Allium victorialis	T	O	42.3
Alpinia officinarum	T	O	57.4
Alpinia officinarum	T	R	88.9
Althaea officinalis	T	O	51.5
Althaea officinalis	T	O	25.2
Amelanchier canadensis	T	O	20.8
Amelanchier canadensis	T	R	42.1
Amsonia tabernaemontana	T	O	30.2
Ananas comosus	T	R	36.2
Anaphalis margaritacea	T	R	33.9
Angelica dahurica	T	R	40.7
Angelica sinensis syn. A. polymorpha	T	O	91.0
Anthriscus cerefolium	T	R	23.3
Anthriscus cerefolium	T	O	21.7
Aralia cordata	T	R	44.1
Aronia melanocarpa	T	R	33.1
Aronia melanocarpa	T	R	100.0
Aronia melanocarpa (Michx.) Etl.	T	R	35.0
Aronia prunifolia	T	R	50.4
Artemisia draculus	T	O	42.5
Asarum europaeum	T	O	39.4
Asclepias incarnata L.	T	O	48.7
Asclepias tuberosa	T	O	21.5
Asotindia chinensis	T	O	24.9
Atriplex hortensis	T	O	22.4
Atropa belladonna	T	O	94.1
Aubépine, hawthorne	T	R	72.7
Begonia convolvulacea	T	O	32.1
Begonia eminii	T	O	40.4
Begonia glabra	T	O	84.3
Begonia manii	T	O	64.2
Berberus vulgaris	T	O	35.4
Beta vulgaris	T	O	34.1
Beta vulgaris	T	R	86.7
Beta vulgaris	T	O	23.8
Beta vulgaris	T	R	79.4
Beta vulgaris	T	O	34.2

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Beta vulgaris	T	R	20.8
Beta vulgaris	T	R	37.0
Beta vulgaris spp. Maritima	T	R	83.6
Betula glandulosa	T	R	62.5
Borago officinalis	T	O	23.5
Brassica Napus	T	O	27.8
Brassica oleracea	T	O	21.8
Brassica oleracea	T	O	22.3
Butomus umbellatus	T	O	20.8
Canna edulis	T	R	100.0
cannelle	T	R	99.5
Carica papaya	T	R	100.0
Chrysanthemum balsamita	T	O	89.3
Chrysanthemum parthenium	T	R	44.6
chrysanthemum coronarium (Chp Suey)	T	O	28.7
chrysanthemum coronarium (Chp Suey)	T	O	59.2
Citrus paradisi	T	R	100.0
Citrus sinensis	T	R	100.0
Cocos nucifera	T	R	100.0
Cocos nucifera	T	O	71.9
Convallaria majalis	T	O	67.1
Corchorus olitorius	T	R	26.0
Crataegus sanguinea	T	O	33.1
Cryptotaenia canadensis	T	R	23.1
Cucumis anguria	T	O	28.4
Cucumis sativus (Fanfare)	T	O	25.7
Cydonia oblonga	T	R	23.6
Datura stramonium	T	O	61.4
Daucus carota	T	R	21.1
Diospiros Kaki	T	R	100.0
Echinacea purpurea	T	O	27.8
Eriobotrya japonica	T	R	25.2
Eruca vesicaria	T	O	34.5
Erysimum perfoliatum Fish. S.	T	O	91.0
Fragaria x ananassa	T	R	37.5
Fucus vesiculosus	T	R	87.1
Fumaria officinalis	T	O	44.4
Gaultheria procumbens	T	R	74.8
Gentiana macrophylla	T	O	44.5
Glyceria maxima	T	O	37.6
Glycine max Envy	T	O	40.3
Glycyrrhiza glabra	T	R	37.7
Hamamelis virginiana	T	R	78.3
Helichrysum angustifolium	T	R	21.8
Heliotropium arborescens	T	O	26.8
Humulus lupulus	T	R	84.7
Humulus lupulus	T	O	39.2

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
<i>Humulus lupulus</i>	T	O	100.0
<i>Humulus lupulus</i>	T	R	100.0
<i>Hydrastis canadensis</i>	T	I	42.7
<i>Hypericum henryi</i>	T	R	51.8
<i>Hypericum perforatum</i>	T	O	52.3
<i>Hypomyces lactiflorum</i>	T	O	30.1
<i>Iberis sempervirens</i>	T	O	90.8
<i>Jeffersonia diphylla</i>	T	O	43.0
<i>Juglans nigra</i>	T	R	68.7
<i>Kochia scoparia</i> (L.) Schrad.	T	O	38.4
<i>Krameria Triandra</i>	T	R	63.6
<i>Lentinus edodes</i>	T	R	100.0
<i>Lentinus edodes</i>	T	R	26.2
<i>Ligularia dentata</i>	T	O	34.9
<i>Ligustrum vulgare</i>	T	O	29.5
<i>Lunaria annua</i>	T	O	72.3
<i>Lunaria annua</i>	T	R	51.1
<i>Lupinus polyphyllus</i> Lindl.	T	O	47.4
<i>Lychnis chalcedonica</i>	T	O	34.4
<i>Lythrum salicaria</i>	T	R	53.8
<i>Mangifera indica</i>	T	R	100.0
<i>Mangifera indica</i>	T	O	29.3
<i>Mangifera indica</i>	T	O	26.1
<i>Nigella arvensis</i>	T	O	73.6
Ni	T	R	25.4
Ni	T	R	24.6
Ni	T	R	49.8
Ni	T	O	43.6
Ni	T	R	28.4
<i>Optunia</i> sp.	T	R	100.0
<i>Panax quinquefolius</i> L.	T	O	27.4
<i>Passiflora caerulea</i>	T	O	39.8
<i>Pastinaca sativa</i>	T	O	20.5
<i>Persea gratissima</i>	T	O	60.9
<i>Phaseolus vulgaris</i>	T	O	37.5
<i>Physostegia virginiana</i>	T	O	64.2
<i>Phytolacca americana</i>	T	O	51.9
<i>Phytolacca americana</i>	T	O	100.0
<i>Plectranthus fruticosus</i>	T	O	23.4
<i>Polygonatum odoratum</i>	T	O	100.0
<i>Polygonum chinense</i>	T	R	33.6
<i>Pontederia cordata</i>	T	O	26.2
<i>Portulaca oleracea</i>	T	O	20.7
<i>Primula veris</i>	T	O	58.2
<i>Prunus persica</i>	T	R	100.0
<i>Prunus persica</i> (hybride de la pêche)	T	R	100.0
<i>Pulmonaria officinalis</i>	T	O	22.8

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
<i>Punica granatum</i>	T	R	100.0
<i>Pyrus pyrifolia</i>	T	R	22.4
<i>Radix Paeonia rubra</i>	T	O	39.8
<i>Rhamnus frangula</i>	T	R	25.3
<i>Raphanus sativus</i>	T	O	45.8
<i>Rhus trilobata</i>	T	O	20.2
<i>Ribes uva-crispa</i>	T	R	34.2
<i>Rosa Rugosa "Alba"</i>	T	O	45.4
<i>Rubus idaeus</i>	T	R	31.2
<i>Rubus idaeus L.</i>	T	O	42.7
<i>Rubus idaeus</i>	T	R	74.2
<i>Rubus occidentalis</i>	T	R	68.1
<i>Rumex crispus fenné</i>	T	R	37.9
<i>Salvia nemorosa</i>	T	O	38.2
<i>Sambucus canadensis</i>	T	O	27.5
<i>Sambucus nigra</i>	T	O	30.8
<i>Sanguisorba minor</i>	T	R	78.3
<i>Saponaria officinalis</i>	T	O	68.7
<i>Saponaria officinalis L.</i>	T	O	44.2
<i>Satureja hortensis</i>	T	O	62.1
<i>Sechium edule</i>	T	O	34.4
<i>Sesamum indicum</i>	T	O	78.8
<i>Sidalcea</i>	T	O	42.9
<i>Silene vulgaris</i>	T	O	51.3
<i>Solidago hybrida</i>	T	O	92.8
<i>Solidago Hybrida</i>	T	O	100.0
<i>Solidago Hybrida</i>	T	R	100.0
<i>Solidago sp ?</i>	T	O	39.6
<i>Tamarindus indica</i>	T	O	64.2
<i>Tanacetum balsamita</i>	T	O	100.0
<i>Tanacetum vulgare</i>	T	O	23.3
<i>Taraxacum officinale</i>	T	O	90.9
<i>Taraxacum officinale (Red ribe)</i>	T	O	34.5
<i>Thuja occidentalis</i>	T	O	37.6
<i>Thymus carpyllum</i>	T	O	20.6
<i>Tiarella</i>	T	R	35.6
<i>Tragopogon sp.</i>	T	R	21.1
<i>Trigonella foenum graecum</i>	T	R	97.3
<i>Tropaeolum majus</i>	T	O	58.8
<i>Tropaeolum majus</i>	T	R	28.6
<i>Tropaeolum majus</i>	T	O	36.7
<i>Tsuga diversifolia</i>	T	R	64.0
<i>Vaccinium angustifolium</i>	T	R	72.2
<i>Vaccinium angustifolium</i>	T	R	50.7
<i>Vaccinium macrocarpon</i>	T	R	52.6
<i>Vitis sp.</i>	T	O	35.1
<i>Vitis sp.</i>	T	R	98.9

Table 5  
Cath B

Nom latin	Stress	Extrait	Inhibition (%)
Vitis sp.	T	R	32.6
Weigela coracensis	T	R	24.6
Zea mays	T	R	100.0
Zea mays	T	R	48.1

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Agastache foeniculum	A	O	91.6
Agropyron cristatum	A	O	24.5
Agropyron repens	A	O	75.2
Agrostis Stofonifera	A	O	94.7
Alchemilla mollis	A	O	39.0
Allium sativum	A	R	100.0
Allium schoenoprasum	A	R	40.0
Althaea officinalis	A	O	98.5
Amaranthus gangeticus	A	R	67.4
Amaranthus gangeticus	A	O	74.3
Amaranthus retroflexus	A	O	100.0
Ambrosia artemisiifolia	A	O	75.4
Anethum graveolens	A	O	48.7
Angelica archangelica	A	O	27.6
Anthemis nobilis	A	O	56.2
Anthemis tinctoria	A	S	42.3
Aralia cordata	A	R	100.0
Aralia nudicaulis	A	R	44.9
Arctium minus	A	O	93.2
Arctium minus	A	O	100.0
Aronia melanocarpa	A	O	22.8
Artemisia abrotanum	A	O	31.3
Artemisia abrotanum	A	O	43.6
Artemisia absinthium	A	O	58.3
Artemisia Absinthium	A	O	71.4
Artemisia dracunculus	A	O	70.5
Artemisia Ludoviciana	A	O	74.4
Artemisia Ludoviciana	A	O	100.0
Asparagus officinalis	A	O	61.9
Aster sp	A	O	100.0
Aster sp	A	O	100.0
Atropa belladonna	A	O	100.0
Beckmannia eruciformis	A	R	22.1
Beckmannia eruciformis	A	O	48.3
Beta vulgaris	A	R	21.2
Beta vulgaris	A	R	100.0
Beta vulgaris spp. Maritima	A	O	30.8
Betta vulgaris	A	O	100.0
Brassica napus	A	R	63.6
Brassica oleracea	A	R	33.3
Brassica rapa	A	R	23.8
Brassica rapa	A	O	26.1
Bromus inermis	A	O	59.6
Calamintha nepeta	A	R	24.0
Campanula rapunculoides	A	O	41.6
Canna edulis	A	O	100.0
Capsella bursa-pastoris	A	O	36.7

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Capsicum annuum	A	R	25.8
Capsicum annuum	A	R	28.2
Capsicum annuum	A	O	64.7
Capsicum annuum	A	R	76.9
Capsicum frutescens	A	O	44.1
Carthamus tinctorius	A	O	42.9
Carum carvi	A	R	28.6
Chaerophyllum bulbosum	A	O	100.0
Chelidonium majus	A	R	100.0
Chenopodium bonus-henricus	A	O	64.3
Chenopodium quinoa	A	R	22.2
Chrysanthemum coronarium	A	O	98.8
Cichorium endivia susp. Endivia	A	R	36.0
Cichorium endivia susp. Endivia	A	O	78.4
Cichorium intybus	A	O	100.0
Citrullus lanatus	A	O	22.7
Citrullus lanatus	A	R	26.7
Citrullus lanatus	A	R	35.9
Citrullus lanatus	A	O	76.5
Coix Lacryma-Jobi	A	O	20.9
Coix Lacryma-Jobi	A	O	93.2
Cornus canadensis	A	O	30.9
Cucurbita pepo	A	O	21.9
Cucumis melo	A	O	44.1
Cucumis sativus	A	O	21.3
Cucumis sativus	A	R	33.3
Cucurbita Maxima	A	R	100.0
Cucurbita moschata	A	R	20.5
Cucurbita pepo	A	O	31.9
Cucurbita pepo	A	R	40.9
Cucurbita pepo	A	O	41.2
Curcuma zedoaria	A	O	26.3
Cymbopogon martinii	A	O	77.8
Daucus carota	A	O	55.1
Daucus carota	A	R	100.0
Dipsacus sativus	A	O	21.1
Elymus junceus	A	O	27.7
Eschscholzia californica	A	O	44.4
Foeniculum vulgare	A	O	81.8
Forsythia intermedia	A	O	40.4
Forsythia intermedia	A	R	100.0
Fragaria x ananassa	A	R	38.5
Galearia ciliata	A	O	46.7
Galium odoratum	A	O	21.6
Galium odoratum	A	R	22.7
Gaultheria hispidula	A	R	71.9
Gaultheria hispidula	A	O	90.2



Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Gentiana lutea	A	R	100.0
Glechoma hederacea	A	O	32.7
Glycine max	A	S	55.1
Glycine max	A	R	100.0
Glycyrrhiza glabra	A	R	100.0
Guizotia abyssinica	A	O	73.8
Hedeoma pulegioides	A	O	100.0
Helianthus tuberosus	A	O	37.2
Hordeum hexastichon	A	R	34.6
Hordeum hexastichon	A	O	63.6
Hordeum vulgare	A	O	66.7
Hordeum vulgare subsp. Vulgare	A	O	33.3
Hypericum henryi	A	O	66.7
Hyssopus officinalis	A	O	100.0
Ipomoea Batatas	A	O	55.1
Iris versicolor	A	R	24.1
Iris versicolor	A	O	30.8
Lathyrus sativus	A	O	20.6
Laurus nobilis	A	O	33.3
Levisticum officinale	A	O	87.6
Linum usitatissimum	A	R	21.4
Linum usitatissimum	A	O	44.4
Lolium perenne	A	O	30.9
Lotus corniculatus	A	O	23.4
Lycopersicon esculentum	A	R	40.0
Matricaria recutita	A	S	56.4
Medicago sativa	A	R	20.5
Melissa officinalis	A	O	100.0
Mentha piperita	A	O	22.7
Mentha piperita	A	R	100.0
Mentha suaveolens	A	O	53.2
Nepeta cataria	A	O	100.0
Nicotiana tabacum	A	O	37.7
Nicotiana tabacum	A	R	44.3
Oenothera biennis	A	O	23.8
Oenothera biennis	A	O	40.0
Oenothera biennis	A	R	100.0
Origanum vulgare	A	O	94.7
Panax quinquefolius	A	O	29.8
Panax quinquefolius	A	O	35.1
Panax quinquefolius	A	O	40.4
Pastinaca sativa	A	O	74.4
Perilla frutescens	A	O	86.7
Perilla frutescens	A	R	100.0
Petasites japonicus	A	O	43.5
Petroselinum crispum	A	O	100.0
Phalaris arundinacea	A	O	21.3

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Phalaris canariensis	A	O	22.0
Phaseolus coccineus	A	O	68.8
Phaseolus mungo	A	S	58.5
Phaseolus mungo	A	O	100.0
Phaseolus vulgaris	A	O	33.3
Phaseolus vulgaris	A	O	80.3
Phleum pratense	A	O	20.2
Physalis ixocarpa	A	R	100.0
Pimpinella anisum	A	O	86.7
Plantago major	A	O	99.0
Plectranthus sp.	A	R	50.0
Plectranthus sp.	A	O	64.0
Polygonum aviculare	A	O	55.7
Poterium sanguisorba	A	R	100.0
Poterium Sanguisorba	A	O	23.4
Prunus Tomentosa	A	O	27.6
Raphanus Sativus	A	O	38.8
Raphanus sativus	A	R	100.0
Rheum rhubarbarum	A	R	33.0
Ribes nigrum	A	R	21.1
Ribes nigrum	A	O	32.6
Ribes rubrum	A	O	24.5
Ribes Sylvestre	A	O	21.1
Ribes Sylvestre	A	R	30.3
Rosa rugosa	A	R	21.1
Rosa rugosa	A	O	38.6
Rosa rugosa	A	O	40.2
Rosmarinus officinalis	A	O	95.7
Rubus canadensis	A	R	25.6
Rubus canadensis	A	O	31.7
Rubus idaeus	A	O	85.9
Rubus idaeus	A	R	68.7
Rumex acetosella	A	O	27.4
Rumex crispus	A	O	25.0
Rumex Scutatus	A	O	21.3
Salvia officinalis	A	O	21.3
Salvia officinalis	A	O	85.1
Salvia officinalis	A	R	100.0
Salvia sclarea	A	O	29.9
Sanguisorba officinalis	A	O	23.1
Sanguisorba officinalis	A	R	48.3
Santolina chamaecyparissus	A	O	52.9
Satureja montana	A	O	87.4
Scorzonera hispanica	A	O	30.8
Secale cereale	A	R	21.2
Senecio vulgaris	A	O	42.6
Sesamum indicum	A	O	27.3

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Silybum marianum	A	O	25.2
Sium sisarum	A	O	34.4
Solanum dulcamara	A	R	21.4
Solanum melanocerasum	A	S	44.6
Solanum melanocerasum	A	R	60.0
Solanum tuberosum	A	O	29.2
Solidago sp	A	O	98.4
Spinacia oleracea	A	O	40.5
Spinacia oleracea	A	S	57.7
Stachys affinis	A	O	23.8
Stachys byzantina	A	O	98.1
Stellaria graminea	A	O	34.4
Stellaria media	A	O	24.6
Symphytum officinale	A	O	87.7
Symphytum officinale	A	O	100.0
Tanacetum cinerarifolium	A	O	70.7
Tanacetum parthenium	A	R	40.0
Tanacetum parthenium	A	O	74.7
Tanacetum parthenium	A	R	100.0
Tanacetum vulgare	A	O	26.7
Tanacetum vulgare	A	R	32.7
Tanacetum vulgare	A	O	98.4
Tanacetum vulgare	A	O	100.0
Taraxacum officinale	A	R	22.7
Taraxacum officinale	A	O	100.0
Teucrium chamaedrys	A	O	100.0
Thymus praecox subsp arcticus	A	O	75.6
Thymus praecox subsp arcticus	A	O	100.0
Thymus serpyllum	A	O	78.1
Thymus vulgaris	A	O	90.9
Trichosanthes kirilowii	A	O	100.0
Trifolium incarnatum	A	S	76.9
Trifolium pannonicum	A	O	72.6
Trifolium pratense	A	O	100.0
Trifolium repens	A	O	100.0
Triticum durum	A	R	22.7
Triticum spelta	A	R	24.0
Triticum spelta	A	O	32.4
Typha latifolia	A	O	52.1
Vaccinium Corymbosum	A	R	53.3
Vaccinium macrocarpon	A	R	44.3
Valefiana officinalis	A	O	23.1
Verbascum thapsus	A	O	65.6
Vitis sp.	A	O	33.7
Vitis sp.	A	R	93.3
Zea mays	A	R	25.0
Zea mays	A	R	50.0

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	G	O	47.7
Agropyron repens	G	O	93.3
Alchemilla mollis	G	O	32.1
Allium ascalonicum	G	O	29.7
Allium sativum	G	R	100.0
Allium schoenoprasum	G	R	100.0
Allium tuberosum	G	R	100.0
Althaea officinalis	G	O	95.6
Amaranthus caudatus	G	O	95.3
Amaranthus gangeticus	G	O	45.7
Amaranthus retroflexus	G	O	78.3
Ambrosia artemisiifolia	G	O	73.8
Amelanchier alnifolius	G	O	50.5
Anethum graveolens	G	O	100.0
Anthemis nobilis	G	O	94.3
Apium graveolens	G	O	21.9
Arctium minus	G	O	65.9
Arctium minus	G	O	71.7
Arctostaphylos uva-ursi	G	O	84.8
Aronia melanocarpa	G	O	31.5
Arrhenatherum elatius	G	S	50.8
Artemisia abrotanum	G	O	52.1
Artemisia absinthium	G	O	59.7
Artemisia absinthium	G	O	72.9
Artemisia Ludoviciana	G	O	64.1
Artemisia Ludoviciana	G	O	90.7
Artemisia vulgaris	G	O	55.2
Artemisia vulgaris	G	O	83.3
Asclepias incarnata	G	O	38.9
Asclepias incarnata	G	O	75.6
Asparagus officinalis	G	R	27.8
Aster sp	G	O	33.3
Atropa belladonna	G	O	96.6
Beta vulgaris	G	O	92.1
Beta vulgaris	G	R	100.0
Beta vulgaris spp. Maritima	G	R	100.0
Borago officinalis	G	O	100.0
Brassica napus	G	R	40.9
Brassica oleracea	G	R	66.7
Bromus inermis	G	O	38.3
Calamintha nepeta	G	R	25.3
Campanula rapunculus	G	S	50.8
Campanula rapunculus	G	O	68.8
Campanula rapunculus	G	O	69.9
Campanula rapunculus	G	S	50.8
Canna edulis	G	O	30.0
Capsella bursa-pastoris	G	O	27.9
Capsicum annuum	G	O	27.9

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Capsicum annuum	G	R	33.3
Capsicum annuum	G	R	35.9
Capsicum annuum	G	R	41.0
Capsicum annuum	G	S	43.1
Capsicum annuum	G	O	56.9
Capsicum frutescens	G	O	60.8
Carthamus tinctorius	G	O	30.2
Carum carvi	G	O	28.6
Chaerophyllum bulbosum	G	O	88.9
Chrysanthemum coronarium	G	O	82.5
Cicer arietinum	G	R	31.8
Cichorium endivia subsp endivia	G	O	100.0
Cichorium intybus	G	O	100.0
Cirsium arvense	G	S	53.8
Cirsium arvense	G	O	63.3
Citrullus lanatus	G	O	40.9
Citrullus lanatus	G	O	56.9
Coffea Lacryma-Jobi	G	O	100.0
Cornus canadensis	G	O	20.2
Cornus canadensis	G	O	35.1
Cucumis anguria	G	R	40.0
Cucurbita maxima	G	O	31.4
Cucurbita maxima	G	R	40.9
Cucurbita moschata	G	O	23.0
Cucurbita moschata	G	R	31.8
Cucurbita moschata	G	S	47.7
Cucurbita pepo	G	O	29.8
Cucurbita pepo	G	R	53.3
Cymbopogon martinii	G	O	100.0
Cynara scolymus	G	O	27.3
Datura metel	G	O	54.1
Daucus carota	G	O	28.6
Daucus carota	G	R	100.0
Digitalis purpurea	G	R	100.0
Dirca palustris	G	R	24.5
Elymus junceus	G	O	38.3
Erigeron speciosus	G	O	73.7
Foeniculum vulgare	G	O	100.0
Forsythia intermedia	G	R	100.0
Forsythia x intermedia	G	O	42.1
Galium odoratum	G	R	63.6
Galium odoratum	G	O	64.7
Gaultheria hispida	G	R	63.4
Gaultheria hispida	G	O	69.6
Glechoma hederacea	G	O	50.5
Glechoma hederacea	G	R	100.0
Glycine max	G	O	27.9

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Glycine max	G	R	100.0
Guizotia abyssinica	G	R	33.3
Guizotia abyssinica	G	O	83.6
Helianthus annuus	G	R	100.0
Helianthus strumosus	G	R	28.9
Helianthus strumosus	G	O	52.2
Helianthus tuberosus	G	O	29.3
Helianthus tuberosus	G	O	54.9
Helichrysum thianschanicum	G	O	30.5
Heliotropium arborescens	G	R	29.1
Hysopus officinalis	G	O	100.0
Ipomoea batatas	G	O	45.8
Lactuca sativa	G	O	26.6
Lathyrus sativus	G	O	72.7
Lathyrus sylvestris	G	O	33.3
Lathyrus sylvestris	G	R	56.8
Lavandula angustifolia	G	R	100.0
Lavandula angustifolia	G	O	100.0
Lavandula latifolia	G	O	100.0
Leonurus cardiaca	G	O	100.0
Levisticum officinale	G	O	98.1
Levisticum officinale	G	R	100.0
Linum usitatissimum	G	O	42.9
Lolium perenne	G	O	25.5
Lotus tetragonolobus	G	R	49.2
Lupinus polyphyllus	G	O	33.3
Lycopersicon esculentum	G	O	29.6
Lycopersicon esculentum	G	R	43.3
Lycopersicon pimpinellifolium	G	R	100.0
Malva moschata	G	O	100.0
Medicago sativa	G	O	32.8
Melissa officinalis	G	O	100.0
Mentha piperita	G	O	40.3
Mentha suaveolens	G	O	79.2
Monarda didyma	G	R	100.0
Nepeta cataria	G	O	100.0
Ocimum basilicum	G	O	80.5
Oenothera biennis	G	O	41.7
Oenothera biennis	G	R	100.0
Origanum majorana	G	O	67.4
Origanum vulgare	G	O	100.0
Oxalis Deppei	G	O	22.2
Oxalis Deppei	G	S	44.6
Oxyria digyna	G	O	21.3
Panax quinquefolius	G	O	25.5
Panax quinquefolius	G	O	38.3
Panicum miliaceum	G	R	83.3

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
<i>Pennisetum alopecuroides</i>	G	R	21.5
<i>Petasites japonicus</i>	G	O	40.6
<i>Petroselinum crispum</i>	G	O	100.0
<i>Peucedanum cervaria</i>	G	O	42.9
<i>Phaseolus mungo</i>	G	O	100.0
<i>Phaseolus vulgaris</i>	G	O	54.8
<i>Phaseolus vulgaris</i>	G	O	67.2
<i>Plantago major</i>	G	O	95.2
<i>Plectranthus sp.</i>	G	R	100.0
<i>Plectranthus sp.</i>	G	O	100.0
<i>Poa compressa</i>	G	O	20.2
<i>Portulaca oleracea</i>	G	O	60.0
<i>Potentilla anserina</i>	G	R	100.0
<i>Poterium sanguisorba</i>	G	O	21.3
<i>Poterium sanguisorba</i>	G	R	100.0
<i>Prunella vulgaris</i>	G	O	70.3
<i>Raphanus Raphanistrum</i>	G	O	33.3
<i>Raphanus Raphanistrum</i>	G	R	80.0
<i>Raphanus sativus</i>	G	O	52.6
<i>Raphanus sativus</i>	G	R	100.0
<i>Ribes nigrum</i>	G	O	42.1
<i>Ribes Sylvestre</i>	G	R	32.0
<i>Ricinus communis</i>	G	R	100.0
<i>Rosa rugosa</i>	G	O	52.4
<i>Rosa rugosa</i>	G	O	80.2
<i>Rosmarinus officinalis</i>	G	O	100.0
<i>Rubus idaeus</i>	G	O	34.8
<i>Rubus occidentalis</i>	G	R	60.0
<i>Rubus occidentalis</i>	G	O	65.3
<i>Rumex crispus</i>	G	O	43.3
<i>Ruta graveolens</i>	G	O	23.0
<i>Salvia officinalis</i>	G	O	100.0
<i>Salvia officinalis</i>	G	R	100.0
<i>Sambucus canadensis</i>	G	O	80.6
<i>Sambucus ebulus</i>	G	R	21.1
<i>Sambucus ebulus</i>	G	O	36.8
<i>Sanguisorba officinalis</i>	G	O	43.6
<i>Santolina chamaecyparissus</i>	G	O	50.6
<i>Saponaria officinalis</i>	G	O	85.6
<i>Satureja hortensis</i>	G	R	36.8
<i>Satureja hortensis</i>	G	O	68.4
<i>Senecio vulgaris</i>	G	O	31.1
<i>Sesamum indicum</i>	G	O	27.3
<i>Stium sisarum</i>	G	O	20.8
<i>Stium sisarum</i>	G	O	47.8
<i>Solanum melanocerasum</i>	G	O	23.5
<i>Solanum melongens</i>	G	O	28.6

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
solanum melongens	G	R	41.2
Solidago sp	G	O	72.1
Sonchus oleraceus	G	O	95.1
Stachys Affinis	G	O	38.1
Stachys byzantina	G	O	28.8
Stellaria graminea	G	O	39.3
Stellaria media	G	O	21.3
Symphytum officinale	G	R	37.8
Symphytum officinale	G	S	43.1
Symphytum officinale	G	O	92.6
Symphytum officinale	G	O	100.0
Tanacetum cinerariifolium	G	O	91.3
Tanacetum parthenium	G	R	60.0
Tanacetum parthenium	G	O	86.7
Tanacetum vulgare	G	O	44.4
Tanacetum vulgare	G	O	67.9
Tanacetum vulgare	G	O	85.7
taraxacum officinale	G	R	40.9
taraxacum officinale	G	O	100.0
Teucrium chamaedrys	G	R	33.3
Teucrium chamaedrys	G	O	66.7
Thymus fragantissimus	G	O	24.1
Thymus praecox subsp arcticus	G	R	25.0
Thymus praecox subsp arcticus	G	O	92.7
Thymus praecox subsp arcticus	G	O	100.0
Thymus praecox subsp arcticus	G	O	100.0
Thymus serpyllum	G	O	64.4
Thymus vulgaris	G	O	72.7
Thymus x citriodorus	G	O	92.4
Tiarella cordifolia	G	O	29.5
Trifolium hybridum	G	O	54.7
Trifolium pannonicum	G	O	92.9
Trifolium pratense	G	O	100.0
Trifolium repens	G	R	37.3
Triticum spelta	G	O	69.5
Triticum turgidum	G	O	23.4
Typha latifolia	G	O	26.5
Vaccinium corymbosum	G	O	27.7
Vaccinium angustifolium	G	R	33.0
Vaccinium macrocarpon	G	R	27.6
Valeriana officinalis	G	O	51.3
Valeriana officinalis	G	O	21.3
Verbascum thapsus	G	O	28.6
Vinca minor	G	R	40.0
Vitis sp.	G	O	42.6
Vitis sp.	G	R	26.9
Zea mays	G	R	100.0
Zea mays	G	R	100.0



Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
<i>Abies lasiocarpa</i>	T	O	25.6
<i>Agastache foeniculum</i>	T	O	100.0
<i>Agropyron cristatum</i>	T	O	20.2
<i>Agrostis alba</i>	T	O	24.5
<i>Alchemilla mollis</i>	T	O	33.3
<i>Alchemilla mollis</i>	T	S	49.2
<i>Alchemilla mollis</i>	T	O	66.2
<i>Allium ampeloprasum</i>	T	O	100.0
<i>Allium ascalonicum</i>	T	O	29.7
<i>Allium ascalonicum</i>	T	R	38.7
<i>Allium cepa</i>	T	R	100.0
<i>Allium tuberosum</i>	T	R	100.0
<i>Alpinia officinarum</i>	T	R	50.0
<i>Athaea officinalis</i>	T	O	58.6
<i>Amaranthus candathus</i>	T	R	22.8
<i>Amaranthus candatus</i>	T	O	93.2
<i>Amaranthus caudatus</i>	T	O	100.0
<i>Amaranthus gangeticus</i>	T	O	57.1
<i>Amaranthus retroflexus</i>	T	O	100.0
<i>Ambrosia artemisiifolia</i>	T	O	86.9
<i>Amelanchier alnifolia</i>	T	O	50.5
<i>Anthemis nobilis</i>	T	O	100.0
<i>Anthriscus cerefolium</i>	T	O	100.0
<i>Aralia cordata</i>	T	R	100.0
<i>Arctium minus</i>	T	O	68.3
<i>Aronia melanocarpa</i>	T	O	50.0
<i>Aronia prunifolia</i>	T	O	44.7
<i>Arrhenatherum elatius</i>	T	O	78.7
<i>Artemisia absinthium</i>	T	O	58.4
<i>Artemisia dracunculus</i>	T	R	28.6
<i>Artemisia dracunculus</i>	T	O	88.3
<i>Artemisia dracunculus</i>	T	O	48.8
<i>Artemisia Ludoviciana</i>	T	O	50.0
<i>Artemisia vulgaris</i>	T	O	50.0
<i>Artemisia vulgaris</i>	T	O	82.8
<i>Asclepias incarnata</i>	T	O	72.9
<i>Asparagus officinalis</i>	T	O	69.8
<i>Aster sp</i>	T	O	35.0
<i>Avena sativa</i>	T	O	31.8
<i>Baptisia tinctoria</i>	T	O	33.8
<i>Beta vulgaris</i>	T	O	25.5
<i>Beta vulgaris</i>	T	O	28.6
<i>Beta vulgaris</i>	T	R	34.6
<i>Beta vulgaris</i>	T	S	43.6
<i>Beta vulgaris</i>	T	O	54.5
<i>Beta vulgaris</i>	T	R	100.0
<i>Beta vulgaris</i>	T	R	100.0
<i>Beta vulgaris spp. Maritima</i>	T	R	100.0
<i>Brassica nigra</i>	T	R	45.5

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Brassica oleracea	T	O	50.0
Brassica oleracea	T	R	100.0
Bromus inermis	T	O	30.9
Calamagrostis arundiflora	T	O	85.6
Calendula officinalis	T	O	23.7
Campanula rapunculus	T	O	25.0
Canna edulis	T	O	28.3
Capsella bursa-pastoris	T	O	21.7
Capsicum annum	T	O	46.1
Capsicum annum	T	R	20.5
Capsicum annum	T	O	23.3
Capsicum annum	T	R	41.0
Capsicum frutescens	T	O	58.8
Carthamus tinctorius	T	O	36.5
Carum carvi	T	O	88.6
Chaerophyllum bulbosum	T	O	25.0
Chaerophyllum bulbosum	T	O	95.2
Chelidonium majus	T	O	27.1
Chelidonium majus	T	R	50.0
Chenopodium bonus-henricus	T	O	60.0
Chenopodium quinoa	T	R	31.5
Chenopodium quinoa	T	O	50.0
Chrysanthemum coronarium	T	R	65.5
Chrysanthemum coronarium	T	O	100.0
Cicer arietinum	T	R	27.3
Cichorium endivia subsp endivia	T	R	27.3
Cichorium endivia subsp endivia	T	O	97.3
Cichorium intybus	T	O	100.0
Cimicifuga racemosa	T	R	22.2
Cirsium arvense	T	O	78.3
Citrullus lanatus	T	R	26.7
Citrullus lanatus	T	O	45.5
Citrullus lanatus	T	O	62.7
Coix Lacryma-Jobi	T	O	77.3
Coriandrum sativum	T	O	90.0
Cornus canadensis	T	O	29.3
Cucumis anguria	T	R	50.0
Cucumis anguria	T	O	70.1
Cucumis melo	T	R	20.5
Cucumis melo	T	O	51.0
Cucumis sativus	T	O	23.4
Cucurbita maxima	T	O	50.0
Cucurbita moschata	T	O	84.9
Cucurbita pepo	T	R	20.5
Cucurbita pepo	T	O	39.2
Cucurbita pepo	T	S	53.8
Curcuma zedoaria	T	O	24.6

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Cymbopogon citratus	T	O	100.0
Cynara scolymus	T	R	33.3
Dactylis Glomerata	T	O	20.2
Datura metel	T	O	37.8
Datura stramonium	T	R	50.0
Daucus carota	T	R	21.1
Daucus carota	T	O	30.3
Daucus carota	T	O	49.3
Daucus carota	T	S	52.3
Dipsacus sativus	T	O	73.7
Dirca palustris	T	O	88.5
Eleusine coracana	T	S	49.2
Elymus junceus	T	O	35.1
Erigeron speciosus	T	O	67.8
Fagopyrum esculentum	T	O	27.3
Foeniculum vulgare	T	R	80.0
Forsythia intermedia	T	O	50.9
Forsythia x intermedia	T	O	57.9
Fucus vesiculosus	T	O	83.7
Fucus vesiculosus	T	R	100.0
Galinsoga ciliata	T	O	56.7
Gallium aparine	T	O	60.5
Gallium odoratum	T	R	31.8
Gaultheria hispida	T	O	33.7
Gaultheria procumbens	T	O	25.0
Gentiana lutea	T	O	98.1
Gentiana macrophylla	T	O	100.0
Glechoma hederacea	T	O	62.6
Glycine max	T	O	26.2
Glycyrrhiza glabra	T	R	50.0
Glycyrrhiza glabra	T	S	51.3
Guizotia abyssinica	T	O	39.3
Guizotia abyssinica	T	R	100.0
Hedeoma pulegioides	T	O	100.0
Helianthus annuus	T	O	75.8
Helianthus strumosus	T	R	55.6
Helianthus tuberosus	T	O	22.1
Helichrysum angustifolium	T	O	96.1
Helichrysum thianschanicum	T	O	70.5
Heliotropium arborescens	T	O	83.2
Helleborus niger	T	O	24.1
Herba Schizonapetae	T	O	60.5
Hibiscus cannabinus	T	S	52.6
Hordeum vulgare	T	O	77.8
Hydrastis canadensis	T	O	64.9
Hypericum henryi	T	O	100.0
Hypericum perforatum	T	R	31.0

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Hyssopus officinalis	T	O	100.0
Inula helenium	T	O	100.0
Ipomoea batatas	T	O	91.5
Iris versicolor	T	O	35.9
Juniperus communis	T	O	83.8
Krameria Triandra	T	O	25.6
Lactuca sativa	T	O	100.0
Lathyrus Sativus	T	R	27.3
Lathyrus Sativus	T	O	33.3
Lathyrus sylvestris	T	O	20.3
Lathyrus sylvestris	T	R	100.0
Laurus nobilis	T	R	23.8
Laurus nobilis	T	O	26.0
Lavandula latifolia	T	R	100.0
Lavandula latifolia	T	O	100.0
Lens culinaris subsp culinaris	T	O	21.3
Leonorus cardiaca	T	O	57.9
Lepidium sativum	T	O	31.6
Levisticum officinale	T	O	90.5
Levisticum officinale	T	R	100.0
Linum usitatissimum	T	O	23.8
Lonicera syringantha	T	O	79.5
Lotus corniculatus	T	R	46.7
Lupinus polyphyllus lindl.	T	O	36.6
Lycopersicon esculentum	T	R	60.0
Malus hupehensis	T	R	100.0
Malva sylvestris	T	O	100.0
Matricaria spp.	T	O	100.0
Medicago sativa	T	O	27.7
Melissa officinalis	T	O	100.0
Menyanthes trifoliata	T	O	44.9
Menyanthes trifoliata	T	R	50.0
Miscanthus sinensis	T	R	23.5
Miscanthus sinensis	T	O	24.6
Miscanthus sinensis	T	O	78.9
Nepeta cataria	T	O	35.7
Ocimum Basilicum	T	R	100.0
Ocimum Basilicum	T	O	100.0
Oenothera biennis	T	R	100.0
Origanum vulgare	T	O	94.7
Origanum vulgare	T	R	100.0
Oxalis Deppei	T	O	21.1
oxyria digyna	T	O	24.6
Panax quinquefolius	T	O	39.4
Panicum miliaceum	T	R	20.8
Pastinaca sativa	T	O	21.3
Pastinaca sativa	T	R	25.0
Pastinaca sativa	T	R	25.0

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Pastinaca sativa	T	O	79.4
Pastinaca sativa	T	O	100.0
Perilla frutescens	T	O	96.0
Perilla frutescens	T	R	100.0
Petasites Japonicus	T	O	29.0
Petroselinum crispum	T	R	40.0
Peucedanum oreoselinum	T	S	55.1
Pfaffia paniculata	T	R	100.0
Phaseolus mungo	T	O	70.2
Phaseolus vulgaris	T	O	71.4
Phaseolus vulgaris	T	O	100.0
Phaseolus vulgaris	T	R	100.0
Phaseolus vulgaris	T	O	25.5
Physalis bicarpa	T	R	100.0
Pimpinella anisum	T	O	100.0
Pimpinella anisum	T	O	37.5
Pisum sativum	T	O	100.0
Plantago major	T	O	36.0
Plectranthus sp.	T	R	80.0
Plectranthus sp.	T	O	38.3
Poa pratensis	T	O	25.5
Populus X petrowskyana	T	O	23.3
Prunella vulgaris	T	O	88.1
Prunella vulgaris	T	O	73.7
Raphanus raphanistrum	T	R	100.0
Raphanus raphanistrum	T	S	60.3
Raphanus sativus	T	R	100.0
Raphanus sativus	T	O	100.0
Roseda luteola	T	O	36.8
Rheum officinale	T	O	20.4
Ribes sativum	T	R	44.3
Ribes Sylvestre	T	R	100.0
Ricinus communis	T	R	60.0
Rosmarinus officinalis	T	O	100.0
Rosmarinus officinalis	T	R	32.0
Rubus canadensis	T	O	34.7
Rubus canadensis	T	O	93.5
Rubus idaeus	T	R	100.0
Rubus idaeus	T	O	38.6
Rubus occidentalis	T	S	52.3
Rubus occidentalis	T	R	100.0
Rubus occidentalis	T	O	26.3
Rumex acetosella	T	O	30.0
Rumex crispus	T	O	23.0
Rumex scutellatus	T	O	62.1
Ruta graveolens	T	O	27.0
Saccharum officinarum	T	O	92.0
Salvia officinalis	T	O	

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Salvia officinalis	T	O	93.3
Sambucus canadensis	T	O	42.9
Sanguisorba officinalis	T	O	68.6
Santolina chamaecyparissus	T	O	66.7
Saponaria officinalis	T	O	36.6
Saponaria officinalis	T	O	84.7
Satureja montana	T	O	80.5
Satureja repandra	T	O	47.1
Senecio vulgaris	T	O	44.3
Setaria italica	T	O	27.9
Silybum marianum	T	O	31.0
Sium sisarum	T	O	24.8
Sium sisarum	T	R	25.5
Solanum dulcamara	T	R	21.4
Solanum melongena	T	R	25.8
Solanum melongena	T	O	34.9
Solanum tuberosum	T	O	38.1
Solidago canadensis	T	O	100.0
Solidago sp	T	O	73.8
Sonchus oleraceus	T	O	100.0
Sorghum durra	T	O	23.8
Spinacia oleracea	T	R	29.3
Stachys affinis	T	R	23.6
Stachys affinis	T	O	23.9
Stachys affinis	T	O	50.0
Stachys affinis	T	O	41.6
Stachys byzantina	T	O	62.3
Stellaria graminea	T	O	27.1
Stipa capillata	T	R	28.9
Symphytum officinale	T	O	87.7
Symphytum officinale	T	O	97.8
Symphytum officinale	T	O	62.7
Tanacetum cinerarifolium	T	O	94.7
Tanacetum parthenium	T	R	28.9
Tanacetum vulgare	T	S	47.7
Tanacetum vulgare	T	O	75.6
Tanacetum vulgare	T	O	95.2
Tanacetum vulgare	T	O	100.0
Tanacetum vulgare	T	O	95.3
Taraxacum officinale	T	R	24.4
Thymus praecox subsp arcticus	T	O	60.0
Thymus praecox subsp arcticus	T	O	90.0
Thymus praecox subsp arcticus	T	O	83.9
Thymus pseudolanuginosus	T	O	100.0
Thymus serpyllum	T	O	93.3
Tiarella cordifolia	T	O	34.4
Tragopogon porrifolius	T	O	58.0

Table 6  
Cath D

Nom latin	Stress	Extrait	Inhibition (%)
Trichosanthes kirilowii	T	R	25.3
Trifolium pannonicum	T	O	61.1
Trifolium pratense	T	O	92.9
Trifolium repens	T	O	100.0
Triticum aestivum	T	O	29.5
Triticum durum	T	O	100.0
Triticum turgidum	T	O	29.7
Ulmus americana	T	O	76.9
Ulmus americana	T	O	81.0
Urtica dioica	T	R	40.9
Vaccinium angustifolium	T	R	28.3
Vaccinium angustifolium	T	O	28.3
Vaccinium angustifolium	T	O	47.6
Vaccinium angustifolium	T	R	100.0
Vaccinium corymbosum	T	O	21.4
Vaccinium macrocarpon	T	R	80.0
Valeriana officinalis	T	O	43.6
Vicia sativa	T	S	43.1
Vitis sp.	T	O	26.7
Vitis sp.	T	R	93.3
Zea mays	T	R	21.2
Zea mays	T	R	100.0

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	V	40.1
Achillea millefolium	A	O	29.5
Acorus calamus	A	R	68.6
Adiantum pedatum	A	R	29.7
Agastache foeniculum	A	O	36.8
Agastache foeniculum	A	S	22.4
Agropyron repens	A	S	24.5
Alchemilla mollis	A	W	100.0
Alchemilla mollis	A	S	81.1
Alchemilla mollis	A	O	51.5
Alchemilla mollis	A	S	78.6
Alchemilla mollis	A	O	82.9
Alchemilla mollis	A	S	35.6
Alkanna tinctoria	A	O	51.6
Alkanna tinctoria	A	R	100.0
Allium Tuberosum	A	S	20.6
Althaea officinalis	A	R	21.6
Althaea officinalis	A	S	39.6
Ambrosia artemisiifolia linné	A	O	47.6
Ambrosia artemisiifolia linné	A	R	38.2
Amelanchier sanguinea (Pursh) DC.	A	W	29.7
Angelica archangelica	A	S	68.1
Anthemis tinctoria	A	O	26.0
Anthemis tinctoria	A	V	28.4
Anthemis tinctorium	A	O	46.9
Arachis hypogaea	A	V	84.5
Aralia nudicaulis	A	S	61.9
Arctostaphylos uva-ursi	A	O	25.0
Arctostaphylos uva-ursi	A	R	100.0
Arctostaphylos uva-ursi	A	S	38.4
Aronia melanocarpa (Michx.) Eil.	A	O	24.4
Aronia melanocarpa (Michx.) Eil.	A	R	27.3
Aronia melanocarpa (Michx.) Eil.	A	W	47.8
Artemisia dracunculifolia sativa	A	W	32.2
Artemisia Ludoviciana	A	O	88.8
Aster sp ?	A	O	47.2
Aster sp ?	A	R	100.0
Beta vulgaris	A	R	23.9
Brassica napus	A	R	22.3
Brassica napus	A	S	22.8
Brassica nigra	A	S	47.2
Brassica rapa	A	S	46.0
Capsella bursa-pastoris (linné) medicus	A	R	43.4
Chaerophyllum bulbosum	A	V	90.7
Chaerophyllum bulbosum	A	W	57.4
Chenopodium bonus-henricus	A	R	23.7
Chichorium endivia	A	O	53.0



Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Chrysanthemum leucanthemum</i> linné	A	O	55.5
<i>Cicer arietinum</i>	A	R	28.2
<i>Cichorium intybus</i>	A	O	100.0
<i>Cichorium intybus</i>	A	V	83.6
<i>Cichorium intybus</i>	A	O	51.0
<i>Crataegus</i> sp ?	A	O	100.0
<i>Crataegus</i> sp ?	A	R	81.6
<i>Cymbopogon citratus</i>	A	S	33.9
<i>Dafnis cannabina</i>	A	S	20.2
<i>Daucus carota</i>	A	O	62.0
<i>Daucus carota</i>	A	W	99.4
<i>Dirca palustris</i>	A	R	24.9
<i>Dirca palustris</i>	A	S	47.0
<i>Dryopteris filix-mas</i>	A	O	24.1
<i>Dryopteris filix-mas</i>	A	R	95.7
<i>Echinacea purpurea</i>	A	V	80.7
<i>Echinacea purpurea</i>	A	W	100.0
<i>Filipendula rubra</i>	A	O	20.2
<i>Filipendula rubra</i>	A	S	77.8
<i>Foeniculum vulgare</i>	A	R	23.3
<i>Fragaria x ananassa</i>	A	O	32.3
<i>Fragaria x ananassa</i>	A	W	100.0
<i>Fragaria x ananassa</i>	A	S	100.0
<i>Fragaria Xananassa</i>	A	S	100.0
<i>Frangoria x ananassa</i>	A	W	100.0
<i>Frangoria x ananassa</i>	A	V	100.0
<i>Gafinsoga ciliata</i> (Rofresqua) Blake	A	R	21.2
<i>Gaultheria hispidula</i> (L.) Muhl.	A	R	85.3
<i>Gaultheria hispidula</i> (L.) Muhl.	A	R	100.0
<i>Gaultheria procumbens</i>	A	W	58.1
<i>Glycine Max</i>	A	S	36.0
<i>Glycine max</i>	A	S	38.7
<i>Glycyrrhiza glabra</i>	A	W	46.2
<i>Glycyrrhiza glabra</i>	A	S	35.5
<i>Glycyrrhiza glabra</i>	A	R	100.0
<i>Hamamelis virginiana</i>	A	R	100.0
<i>Helianthus tuberosus</i>	A	W	22.6
<i>Helichrysum angustifolium</i>	A	V	82.8
<i>Heliotropium arborescens</i>	A	O	57.3
<i>Heliotropium arborescens</i>	A	R	57.2
<i>Hordeum vulgare</i>	A	O	34.3
<i>Hypericum henryi</i>	A	O	30.4
<i>Hypericum perforatum</i>	A	R	100.0
<i>Inula helenium</i>	A	S	64.0
<i>Isatis tinctoria</i>	A	O	94.0
<i>Laurus nobilis</i>	A	S	49.9
<i>Lavendula latifolia</i>	A	W	100.0

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Lavandula latifolia	A	V	48.7
Leonurus cardiaca	A	R	100.0
Levisicum officinale	A	V	46.8
Lolium multiflorum	A	O	34.1
Melissa officinalis	A	O	54.1
Melissa officinalis	A	W	100.0
Melissa officinalis	A	V	80.7
Melissa officinalis	A	O	100.0
Mentha pulegium	A	O	29.1
Mentha spicata	A	V	47.0
Nepeta cataria	A	V	57.6
Ocrotthera biennis	A	S	33.1
Oenothera biennis linné	A	O	47.4
Oenothera biennis linné	A	R	100.0
Origanum majorana	A	S	34.6
Origanum vulgare	A	V	65.9
Origanum vulgare	A	W	48.2
Origanum vulgare	A	V	70.0
Origanum vulgare	A	W	62.9
Origanum vulgare	A	O	68.4
Origanum vulgare	A	V	81.9
Origanum vulgare	A	W	61.3
Origanum vulgare	A	S	21.7
Oxyria digyna	A	V	40.1
Perilla frutescens	A	V	65.0
Perilla frutescens	A	W	51.9
Peucedanum cervaria	A	R	28.3
Peucedanum cervaria	A	R	45.1
Phaseolus Vulgaris	A	S	38.4
Phaseolus Vulgaris	A	S	26.3
Phytolacca americana	A	S	27.8
Plantago coronopus	A	O	22.7
Polygonum aviculare linné	A	R	76.0
Poterium sanguisorba	A	O	20.1
Poterium sanguisorba	A	R	93.1
Poterium sanguisorba	A	V	47.7
Poterium sanguisorba	A	S	36.1
Pteridium aquilinum	A	O	25.7
Pteridium aquilinum	A	R	100.0
Ribes nidigrolaria	A	W	51.8
Ribes Nigrum	A	W	100.0
Ribes nigrum	A	S	33.8
Ribes nigrum L.	A	W	58.8
Ribes nigrum L.	A	O	21.5
Ribes Salivum	A	R	21.4
Ricinus communis	A	R	100.0
Rosa rugosa thunb.	A	W	20.1

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Rosa rugosa</i> thunb.	A	W	100.0
<i>Rosa rugosa</i> thunb.	A	R	100.0
<i>Rosmarinus officinalis</i>	A	O	100.0
<i>Rosmarinus officinalis</i>	A	R	64.0
<i>Rosmarinus officinalis</i>	A	W	55.6
<i>Rosmarinus officinalis</i>	A	V	76.7
<i>Rubus allegheniensis</i>	A	S	32.1
<i>Rubus canadensis</i>	A	W	94.5
<i>Rubus canadensis</i>	A	S	64.2
<i>Rubus idaeus</i>	A	S	88.0
<i>Rubus idaeus</i>	A	O	29.5
<i>Rubus idaeus</i>	A	W	38.7
<i>Rubus idaeus</i>	A	S	41.0
<i>Rubus idaeus</i>	A	W	100.0
<i>Rubus idaeus</i> L.	A	V	30.2
<i>Rubus idaeus</i> L.	A	W	29.4
<i>Rubus idaeus</i> L.	A	S	100.0
<i>Rubus idaeus</i>	A	R	100.0
<i>Rubus idaeus</i>	A	S	67.1
<i>Rubus occidentalis</i>	A	S	100.0
<i>Rumex crispus</i> Linné	A	R	100.0
<i>Salvia elegans</i>	A	W	69.7
<i>Salvia officinalis</i>	A	W	100.0
<i>Salvia officinalis</i>	A	V	58.0
<i>Salvia officinalis</i>	A	O	100.0
<i>Salvia officinalis</i>	A	R	39.9
<i>Salvia officinalis</i>	A	V	45.7
<i>Salvia officinalis</i>	A	W	65.4
<i>Salvia sclarea</i>	A	W	29.1
<i>Santolina</i>	A	W	65.5
<i>Satureja montana</i>	A	V	72.2
<i>Satureja montana</i>	A	W	100.0
<i>Satureja montana</i>	A	O	80.5
<i>Satureja montana</i>	A	V	28.9
<i>Scutellaria lateriflora</i>	A	S	23.7
<i>Sonchus oleraceus</i> L.	A	O	25.9
<i>Sorghum dochna</i> bicolor	A	O	25.6
<i>Sorghum durra</i> (Stapf)	A	O	48.9
<i>Symphytum officinale</i>	A	O	99.4
<i>Symphytum officinale</i>	A	O	97.8
<i>Tanacetum cinerariifolium</i>	A	W	28.2
<i>Tanacetum parthenium</i>	A	W	34.8
<i>Tanacetum vulgare</i>	A	W	80.0
<i>Tanacetum vulgare</i>	A	V	53.8
<i>Tanacetum vulgare</i>	A	O	35.9
<i>Tanacetum vulgare</i>	A	R	68.8
<i>Tanacetum vulgare</i> "Goldsticks"	A	V	51.9

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Taraxacum officinale	A	W	28.5
Taraxacum officinale	A	V	82.3
Thymus praecox subsp arctius	A	O	43.4
Thymus pseudolanuginosus	A	V	28.7
Thymus serpyllum	A	O	100.0
Thymus serpyllum	A	W	73.6
Thymus serpyllum	A	V	74.9
Thymus vulgaris	A	O	35.8
Thymus vulgaris	A	R	68.6
Thymus vulgaris "Argenteus"	A	V	73.9
Triticum furgidum??	A	O	21.8
Vaccinium angustifolium	A	S	26.1
Vaccinium Corymbosum	A	W	95.7
Vaccinium macrocarpon	A	W	48.1
Valerianella locusta	A	S	96.0
Veronica officinalis	A	S	28.4
Viburnum trilobum Marsh.	A	W	25.0
Vicia sativa	A	O	28.2
Vicia villosa	A	O	34.5
Vitis sp.	A	W	28.0
Vitis sp.	A	S	41.6
Vitis sp.	A	W	100.0
Vitis sp.	A	S	30.8
Vitis sp.	A	O	22.3
Vitis sp.	A	S	28.5
Zea Mays	A	S	32.3
Zea Mays	A	S	34.5
Achillea millefolium	G	W	30.8
Achillea millefolium	G	V	71.1
Aconitum napellus	G	R	100.0
Acorus calamus	G	R	27.8
Adiantum pedatum	G	R	100.0
Agastache toeniculum "Snow Pike"	G	V	48.9
Agastache toeniculum "Snow Pike"	G	W	71.5
Alchemilla mollis	G	W	100.0
Alchemilla mollis	G	O	52.6
Alchemilla mollis	G	S	80.7
Alchemilla mollis	G	O	33.4
Alchemilla mollis	G	S	38.7
alfhaea officinalis	G	R	27.5
alfhaea officinalis	G	S	36.9
Ambrosia artemisiifolia linné	G	O	48.4
Ambrosia artemisiifolia linné	G	R	38.0
Amelanchier sanguinea (Pursh) DC.	G	W	46.5
Angelica archangelica	G	S	39.1
Arachis hypogaea	G	V	81.8
Aralia nudicaulis	G	S	44.9

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Arctium minus</i> (Hill) Bernhardt	G	O	35.6
<i>Arctostaphylos uva-ursi</i>	G	S	59.9
<i>Aronia melanocarpa</i> (Michx.) Ell.	G	W	28.4
<i>Artemisia Ludoviciana</i>	G	O	66.0
<i>Aster</i> sp ?	G	O	51.8
<i>Aster</i> sp ?	G	R	100.0
<i>Beta vulgaris</i>	G	R	26.5
<i>Brassica napus</i>	G	R	32.9
<i>Brassica napus</i>	G	S	33.6
<i>Brassica oleracea</i>	G	S	100.0
<i>Calamintha nepeta</i>	G	V	51.5
<i>Calendula officinalis</i> L.	G	O	26.7
<i>Canna edulis</i>	G	O	20.6
<i>Chaerophyllum bulbosum</i>	G	O	37.0
<i>Chaerophyllum bulbosum</i>	G	V	88.6
<i>Chaerophyllum bulbosum</i>	G	W	26.5
<i>Chichorium endivia</i>	G	S	25.2
<i>Chrysanthemum leucanthemum</i> Linné	G	O	44.2
<i>Cicer arietinum</i>	G	R	26.1
<i>Cichorium endivia</i>	G	O	23.7
<i>Cichorium intybus</i>	G	O	100.0
<i>Cichorium intybus</i>	G	V	79.2
<i>Cichorium intybus</i>	G	O	82.5
<i>Crataegus</i> sp ?	G	W	27.9
<i>Cynara scolymus</i>	G	O	66.3
<i>Dirca palustris</i>	G	R	28.8
<i>Dirca palustris</i>	G	S	85.2
<i>Dryopteris filix-mas</i>	G	R	100.0
<i>Echinacea purpurea</i>	G	V	84.2
<i>Echinacea purpurea</i>	G	O	83.2
<i>Erigeron speciosus</i> (Lindl.) D.C.	G	O	46.1
<i>Fagopyrum esculentum</i>	G	O	27.5
<i>Filipendula rubra</i>	G	S	59.6
<i>Galinsoga ciliata</i> (Rafinesque) Blake	G	R	20.5
<i>Galium odoratum</i>	G	R	56.8
<i>Gaultheria hispida</i> (L.) Muhl	G	O	100.0
<i>Glycine max</i>	G	O	22.8
<i>Glycyrrhiza glabra</i>	G	S	28.4
<i>Hamamelis virginiana</i>	G	O	33.8
<i>Hamamelis virginiana</i>	G	R	100.0
<i>Helianthus annuus</i>	G	R	26.5
<i>Helianthus strumosus</i>	G	O	21.2
<i>Helianthus tuberosus</i> L.	G	W	48.4
<i>Helichrysum angustifolium</i>	G	W	38.1
<i>Helichrysum angustifolium</i>	G	V	83.8
<i>Helichrysum thianschanicum</i> Regel	G	O	61.3
<i>Heliotropium arborescens</i>	G	O	58.2

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Heliotropium arborescens</i>	G	R	54.9
<i>Humulus lupulus</i>	G	V	70.5
<i>Humulus lupulus</i>	G	S	43.0
<i>Hypericum henryi</i>	G	O	31.0
<i>Hypericum perforatum</i>	G	R	100.0
<i>Inula helenium</i>	G	W	85.3
<i>Inula helenium</i>	G	V	74.7
<i>Inula helenium</i>	G	S	37.4
<i>Ipomea batatas</i>	G	O	39.0
<i>Isatis tinctoria</i>	G	O	100.0
<i>Laportea canadensis</i>	G	O	28.9
<i>Laurus nobilis</i>	G	W	51.5
<i>Laurus nobilis</i>	G	S	100.0
<i>Lavendula angustifolia</i>	G	V	44.4
<i>Lavendula latifolia</i>	G	V	44.8
<i>Ledum groenlandicum</i>	G	S	100.0
<i>Levistecum officinale</i>	G	W	39.8
<i>Matricaria recutita</i>	G	O	100.0
<i>Melissa officinalis</i>	G	W	98.0
<i>Melissa officinalis</i>	G	V	76.3
<i>Melissa officinalis</i>	G	R	36.6
<i>Melissa officinalis</i>	G	O	80.6
<i>Mentha arvensis</i>	G	O	83.5
<i>Mentha piperita</i>	G	O	79.0
<i>Mentha piperita vulgaris</i>	G	V	45.9
<i>Mentha pulegium</i>	G	O	47.0
<i>Mentha spicata</i>	G	V	73.8
<i>Mentha spicata</i>	G	O	81.3
<i>Mentha spicata</i>	G	O	93.0
<i>Monarda didyma</i>	G	S	35.8
N	G	R	100.0
N	G	R	34.8
<i>Nepeta cataria</i>	G	V	38.4
<i>Ocimum basilicum</i>	G	W	20.4
<i>Ocimum basilicum</i>	G	O	89.9
<i>Ocimum basilicum</i>	G	V	31.3
<i>Ocimum basilicum</i>	G	W	82.3
<i>Oenothera biennis linné</i>	G	O	62.8
<i>Oenothera biennis linné</i>	G	R	100.0
<i>Oenothera biennis linné</i>	G	R	100.0
<i>Oenothera biennis Linné</i>	G	S	100.0
<i>Origanum vulgare</i>	G	V	67.1
<i>Origanum vulgare</i>	G	V	65.5
<i>Origanum vulgare</i>	G	W	58.1
<i>Origanum vulgare</i>	G	V	70.5
<i>Origanum vulgare</i>	G	W	34.5
<i>Origanum vulgare</i>	G	V	60.1

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Origanum vulgare	G	O	100.0
Origanum vulgare	G	S	28.5
Origanum vulgare	G	O	83.7
Origanum vulgare	G	S	22.1
Oxyria digyna	G	V	57.7
Perilla frutescens	G	V	75.8
Peucedanum cervaria	G	R	37.5
Peucedanum cervaria	G	R	25.3
Plantago major	G	O	31.7
Plectranthus sp.	G	V	28.5
Portulaca oleracea linné	G	O	37.8
Potentilla anserina	G	S	21.1
Poterium sanguisorba	G	V	72.1
Poterium sanguisorba	G	S	65.9
Poterium sanguisorba	G	O	63.6
Poterium sanguisorba	G	W	28.7
Prunella vulgaris	G	O	40.7
Pteridium aquilinum	G	O	25.7
Pteridium aquilinum	G	R	100.0
Raphanus Raphanistrum	G	R	42.7
Ribes nidigrolaria	G	W	45.9
Ribes nigrum	G	W	35.9
Ribes Silvestris	G	W	34.9
Ribes Uva-crispa	G	S	30.5
Ricinus communis	G	R	95.0
Ricinus communis	G	S	48.3
Rosa rugosa thurb.	G	W	40.3
Rosa rugosa thurb.	G	S	97.8
Rosmarinus officinalis	G	O	100.0
Rosmarinus officinalis	G	R	54.1
Rosmarinus officinalis	G	W	77.7
Rosmarinus officinalis	G	V	72.2
Rubus canadensis	G	S	25.3
Rubus idaeus L.	G	W	31.1
Rubus idaeus	G	S	100.0
Rubus idaeus	G	R	37.6
Rubus idaeus	G	O	34.8
Rubus occidentalis	G	S	93.3
Rubus occidentalis	G	O	22.7
Rubus occidentalis	G	S	21.6
Rumex crispus linné	G	R	100.0
Rumex crispus linné	G	R	100.0
Salvia elegans	G	V	41.3
Salvia elegans	G	W	62.9
Salvia officinalis	G	R	43.3
Salvia officinalis	G	O	55.1
Salvia officinalis	G	W	100.0

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Salvia officinalis	G	V	52.5
Salvia officinalis	G	O	100.0
Salvia officinalis	G	R	38.8
Salvia officinalis	G	V	49.5
Salvia officinalis	G	W	95.3
Salvia officinalis	G	W	41.3
Salvia sclarea	G	W	31.1
Sanicula communis	G	O	59.7
Sanicula vivace	G	O	72.3
Sanicula vivace	G	S	28.0
Satureja montana	G	V	78.5
Satureja montana	G	W	100.0
Solanum tuberosum	G	O	35.8
Sonchus oleraceus L.	G	O	41.0
Sorghum dochna	G	S	100.0
Sorghum sudanense	G	O	32.8
Sorghum sudanense	G	W	39.7
Symphitum officinale	G	V	79.4
Symphitum officinale	G	O	74.6
Tanacetum parthenium	G	V	23.1
Tanacetum parthenium	G	W	24.3
Tanacetum vulgare	G	W	20.8
Tanacetum vulgare	G	O	32.0
Tanacetum vulgare	G	O	58.5
Tanacetum vulgare "Goldsticks"	G	V	44.8
Taraxacum officinale	G	V	58.2
Thymus fragrantissimus	G	R	39.9
Thymus herba-barona	G	W	28.6
Thymus herba-barona	G	V	35.7
Thymus praecox subsp arctius	G	O	78.0
Thymus serpyllum	G	V	47.4
Thymus serpyllum	G	O	100.0
Thymus serpyllum	G	W	22.6
Thymus serpyllum	G	V	70.2
Thymus vulgaris	G	O	40.8
Thymus vulgaris	G	W	37.3
Thymus vulgaris "Argenteus"	G	V	87.7
Thymus x citriodorus	G	W	27.2
Vaccinium angustifolium	G	S	41.7
Vaccinium macrocarpon	G	W	63.5
Viburnum trilobum Marsh.	G	R	67.7
Viburnum trilobum Marsh.	G	W	23.6
Vicia sativa	G	O	38.5
Vicia villosa	G	O	25.2
Vitis sp.	G	S	24.8
Vitis sp.	G	W	100.0
Vitis sp.	G	R	100.0



Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Vitis sp.	G	S	20.8
Zea mays	G	O	53.7
Achillea millefolium	T	W	41.8
Achillea millefolium	T	V	31.5
Acorus calamus	T	R	68.4
Acorus calamus	T	S	39.2
Adiantum pedatum	T	R	100.0
Agastache foeniculum	T	O	78.0
Agastache foeniculum "Snow Pike"	T	W	34.5
Agastache foeniculum "Snow Pike"	T	V	54.3
Agrimonia eupatoria	T	W	100.0
Alchemilla mollis	T	V	37.1
Alchemilla mollis	T	W	100.0
Alchemilla mollis	T	S	98.6
Alchemilla mollis	T	O	24.3
Alchemilla mollis	T	S	83.7
Alchemilla mollis	T	O	80.0
Althaea officinalis	T	S	34.1
Althaea officinalis	T	S	34.3
Althaea officinalis	T	S	30.8
Ambrosia artemisiifolia finné	T	O	61.6
Ambrosia artemisiifolia finné	T	R	52.1
Amelanchier sanguinea x A. laevis	T	S	38.6
angelica archangelica	T	S	54.8
Anthemis tinctorium	T	O	67.7
Arachis hypogaea	T	V	85.1
Aralia nudicaulis	T	S	74.2
Arctostaphylos uva-ursi	T	R	98.8
Arctostaphylos uva-ursi	T	S	82.4
Aronia prunifolia	T	W	27.3
Artemisia draculus	T	S	20.2
Artemisia draculus	T	S	37.2
Artemisia Ludoviciana	T	O	54.8
Aster sp ?	T	O	43.4
Aster sp ?	T	R	99.9
Ayperus esculentus	T	W	46.9
Beta vulgaris	T	R	81.4
Beta vulgaris	T	O	30.6
Betula glandulosa	T	W	58.2
Borago officinalis	T	O	20.2
Brassica juncea	T	R	56.6
Brassica napus	T	R	34.1
Brassica nigra	T	S	32.3
Brassica rapa	T	R	21.4
Calamintha nepeta	T	V	71.4
Calamintha nepeta	T	W	30.3
Canna edulis	T	O	31.9

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Canneberge	T	R	66.3
Capsella bursa-pastoris (linné) medicus	T	R	37.1
Carya cordiformis	T	W	100.0
Chaerophyllum bulbosum	T	V	86.0
Chrysanthemum leucanthemum linné	T	O	45.4
Cichorium intybus	T	V	74.8
Cichorium intybus	T	W	23.8
Cichorium intybus	T	O	38.9
Cimicifuga racemosa	T	W	65.1
Citrus colocynthis	T	S	50.2
Citrus limetoides	T	O	45.1
Citrus limetoides	T	V	28.9
Citrus limon	T	O	25.9
Citrus limon	T	V	43.3
Citrus limon	T	O	22.1
Coix Lacryma-Jobi	T	W	62.0
Coriandrum sativum	T	R	44.0
Crataegus sp ?	T	S	40.7
Crataegus submollis	T	S	29.3
Crataegus submollis	T	O	22.2
Curcuma longa syn. C. domestica	T	R	42.2
Cynara scolymus	T	O	29.1
Dioscorea batatas	T	O	28.8
Dioscorea batatas	T	V	57.8
Diospirbs Kaki	T	S	39.2
Dorca palustris	T	R	42.8
Dolichus lablab	T	O	24.9
Dryopteris filix-mas	T	R	100.0
Dryopteris filix-mas	T	V	78.9
Echinacea purpurea	T	W	95.8
Echinacea purpurea	T	O	53.7
Echinacea purpurea	T	O	96.2
Erigeron speciosus (Lindl.) D.C.	T	O	42.7
Fragaria	T	S	100.0
Fragaria x ananassa	T	S	100.0
Fragaria x ananassa	T	O	30.2
Fruit de la passion	T	O	93.3
Fucus vesiculosus	T	R	33.0
Galinsoga ciliata (Rofiresque) Blake.	T	R	27.0
Galium odoratum	T	W	100.0
Gaultheria hispidula (L.) Muhl	T	W	30.0
Gaultheria procumbens	T	S	100.0
Gaultheria procumbens	T	O	20.1
Glycine max Envy	T	W	47.9
Glycyrrhiza glabra	T	R	74.1
Guizotia abyssinica	T	S	22.7
Guizotia abyssinica	T	O	100.0
Hamamelis virginiana	T	O	100.0

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Hamamelis virginiana	T	R	100.0
Helenium hoopesii	T	O	21.7
Helenium hoopesii	T	S	24.8
Hellanthus annuus	T	O	21.0
Hellanthus strumosus	T	O	85.6
Hellanthus tuberosa	T	V	84.5
Hellanthus tuberosa	T	W	100.0
Helichrysum angustifolium	T	O	100.0
Helichrysum angustifolium	T	W	87.0
Helichrysum angustifolium	T	V	84.4
Helichrysum angustifolium	T	S	92.3
Helichrysum thianschanicum Regel	T	O	59.5
Heliotropium arborescens	T	O	85.1
Hibiscus cannabinus	T	O	25.0
Humulus lupulus	T	S	21.4
Humulus lupulus	T	S	21.5
Humulus lupulus	T	R	88.4
Humulus lupulus	T	S	22.5
Hypericum perforatum	T	R	100.0
Inula helenium	T	V	97.1
Inula helenium	T	W	69.0
Inula helenium	T	S	29.3
Ipomea batatas	T	O	27.0
Iris versicolor	T	R	22.9
Juniperus communis	T	R	100.0
Krameria Triandra	T	O	52.6
Lathyrus sylvestris	T	R	32.5
Laurus nobilis	T	S	100.0
Lavendula angustifolia	T	V	74.8
Lavendula angustifolia	T	W	70.2
Lavendula latifolia	T	W	85.8
Lavendula latifolia	T	V	63.3
Lavendula latifolia	T	O	20.2
Ledum groenlandicum	T	R	100.0
Ledum groenlandicum	T	S	94.1
Lepidium sativum	T	O	20.5
Litchi chinensis	T	S	100.0
Lotium multiflorum	T	O	22.7
Lonicera ramosissima	T	S	30.9
Lotus corniculatus	T	R	60.2
Malus	T	V	23.1
Malva moschata	T	S	31.4
Melissa officinalis	T	V	81.4
Melissa officinalis	T	W	87.5
Melissa officinalis	T	O	100.0
Melissa officinalis	T	V	36.0
Melissa officinalis	T	W	36.8

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Melissa officinalis	T	O	100.0
Melissa officinalis	T	R	30.3
mentha arvensis	T	R	67.2
Mentha piperita	T	S	20.8
Mentha piperita	T	O	100.0
Mentha piperita	T	S	26.9
Mentha piperita	T	O	97.8
Mentha piperita vulgaris	T	W	20.2
Mentha piperita vulgaris	T	V	42.5
Mentha pulegium	T	O	100.0
Mentha spicata	T	W	51.6
Mentha spicata	T	V	81.8
Mentha spicata	T	O	100.0
Mentha spicata	T	O	100.0
Mentha spicata	T	S	23.2
Nepeta cataria	T	V	62.8
Ocimum Basilicum	T	V	41.1
Ocimum Basilicum	T	W	40.0
Ocimum Basilicum	T	O	28.4
Oenothera biennis liné	T	O	67.3
Oenothera biennis liné	T	R	100.0
Onobrychis viciafolia	T	O	34.0
Origanum marjorana	T	O	29.5
Origanum vulgare	T	V	55.5
Origanum vulgare	T	W	67.7
Origanum vulgare	T	W	46.4
Origanum vulgare	T	V	68.6
Origanum vulgare	T	W	99.9
Origanum vulgare	T	V	42.0
Origanum Vulgare	T	V	28.8
Origanum Vulgare	T	W	46.7
Origanum vulgare	T	O	100.0
Origanum vulgare	T	W	51.7
Origanum vulgare	T	S	30.8
Origanum vulgare	T	O	25.4
Origanum vulgare	T	S	38.2
oxyria digyna	T	V	23.1
Pastinaca sativa	T	O	33.1
Pastinaca sativa	T	R	22.2
Perilla frutescens	T	O	100.0
Perilla frutescens	T	W	61.7
Perilla frutescens	T	V	75.6
Petroselinum crispum Nyman ex.A. W Hill	T	W	24.8
Peucedanum cervaria	T	R	53.0
Peucedanum cervaria	T	R	35.9
Plaffia paniculata	T	O	85.9
Phaseolus vulgaris	T	O	35.7

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Phytolacca americana</i>	T	S	28.6
<i>Phytolacca decandra</i> syn. <i>P. americana</i>	T	O	31.6
<i>Plectranthus</i> sp.	T	V	66.0
<i>Polygonum chinense</i>	T	S	33.2
<i>Polygonum aviculare</i> linné	T	R	100.0
<i>Populus X petrowskyana</i>	T	O	25.4
<i>Potentilla anserina</i>	T	S	55.8
<i>Poterium sanguisorba</i>	T	W	100.0
<i>Poterium sanguisorba</i>	T	V	82.3
<i>Prunella vulgaris</i>	T	O	52.6
<i>Psoralea corylifolia</i>	T	O	21.3
<i>Psoralea corylifolia</i>	T	S	26.0
<i>Psoralea corylifolia</i>	T	S	27.4
<i>Pteridium aquilinum</i>	T	R	100.0
<i>Punica granatum</i>	T	V	21.3
<i>Punica granatum</i>	T	W	77.1
<i>Punica granatum</i>	T	S	43.9
<i>Radix Rehmannia</i>	T	O	23.9
<i>Raphanus raphanistrum</i>	T	R	36.5
<i>Raphanus raphanistrum</i>	T	R	30.5
<i>Rhamnus frangula</i>	T	R	100.0
<i>Rheum palmatum</i>	T	W	100.0
<i>Rianus communis</i>	T	R	100.0
<i>Rianus communis</i>	T	S	100.0
<i>Rianus communis</i>	T	S	68.2
<i>Ribes Grossularia</i> L.	T	W	61.1
<i>Ribes nidigrolaria</i>	T	W	32.1
<i>Ribes nigrum</i>	T	O	90.2
<i>Ribes nigrum</i>	T	S	20.3
<i>Ribes nigrum</i> L.	T	W	21.1
<i>Ribes nigrum</i> L.	T	W	51.6
<i>Ribes sativum</i> syme	T	W	20.9
<i>Ribes uva-crispa</i>	T	S	41.8
<i>Rosa rugosa</i>	T	S	100.0
<i>Rosa rugosa</i> thumb.	T	W	94.1
<i>Rosmarinum officinalis</i>	T	O	100.0
<i>Rosmarinum officinalis</i>	T	R	40.0
<i>Rosmarinum officinalis</i>	T	V	76.9
<i>Rubus canadensis</i>	T	S	31.3
<i>Rubus canadensis</i>	T	V	22.8
<i>Rubus canadensis</i>	T	W	100.0
<i>Rubus idaeus</i>	T	V	25.0
<i>Rubus idaeus</i> L.	T	S	100.0
<i>Rubus idaeus</i>	T	S	46.1
<i>Rubus idaeus</i>	T	R	32.0
<i>Rubus idaeus</i>	T	O	28.5
<i>Rubus occidentalis</i>	T	R	100.0

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
<i>Rubus occidentalis</i>	T	O	23.5
<i>Rumex scutatus</i>	T	O	27.1
<i>Rumex acetosella</i> linné	T	O	23.0
<i>Rumex crispus</i> linné	T	R	100.0
<i>Rumex crispus</i> linné	T	R	100.0
<i>Salvia (elegans)</i>	T	O	100.0
<i>Salvia elegans</i>	T	W	63.5
<i>Salvia officinalis</i>	T	O	34.0
<i>Salvia officinalis</i>	T	R	41.7
<i>Salvia officinalis</i>	T	V	64.3
<i>Salvia officinalis</i>	T	W	100.0
<i>Salvia officinalis</i>	T	R	38.8
<i>Salvia officinalis</i>	T	O	73.4
<i>Salvia officinalis</i>	T	W	95.3
<i>Salvia officinalis</i>	T	V	58.8
<i>Salvia officinalis</i>	T	W	25.1
<i>Salvia sclarea</i>	T	W	28.6
<i>Sambucus canadensis</i>	T	S	40.1
<i>Sambucus canadensis</i> L.	T	O	50.2
<i>Sambucus canadensis</i>	T	S	29.7
<i>Sanguisorba minor</i>	T	V	32.0
<i>Sanguisorba minor</i>	T	W	59.5
<i>Sanguisorba minor</i>	T	S	58.5
<i>Sanguisorba minor</i>	T	S	68.5
<i>Satureja hortensis</i>	T	O	68.5
<i>Satureja hortensis</i>	T	S	20.1
<i>Satureja montana</i>	T	O	43.3
<i>Satureja montana</i>	T	R	36.7
<i>Satureja montana</i>	T	W	100.0
<i>Satureja montana</i>	T	V	81.1
<i>Satureja montana</i>	T	S	40.6
<i>Satureja montana</i>	T	V	54.0
<i>Satureja montana</i>	T	O	90.1
<i>Satureja repandra</i>	T	R	35.8
<i>Satureja repandra</i>	T	W	100.0
<i>Satureja repandra</i>	T	V	75.0
<i>Solanum Tuberosum</i>	T	O	30.9
<i>Solidago canadensis</i>	T	R	91.8
<i>Sonchus oleraceus</i> L.	T	O	45.9
<i>Sorghum dochna</i> Snowdrew	T	O	31.5
<i>Sorghum sudanense</i>	T	O	33.6
<i>Stipa capillata</i> L.	T	O	33.0
<i>Symphytum officinale</i>	T	O	94.1
<i>Symphytum officinale</i>	T	O	42.8
<i>Tanacetum parthenium</i>	T	W	40.1
<i>Tanacetum parthenium</i>	T	V	33.6
<i>Tanacetum vulgare</i>	T	V	38.5

Table 7  
Cath G

Nom latin	Stress	Extrait	Inhibition (%)
Tanacetum vulgare	T	W	51.2
Tanacetum vulgare	T	O	95.6
Tanacetum vulgare	T	O	38.4
Tanacetum vulgare	T	R	27.4
Tanacetum vulgare "Goldsticks"	T	V	37.9
Tanacetum vulgare "Goldsticks"	T	V	57.8
Taraxacum officinale	T	R	34.0
Thymus fragantissimus	T	W	72.7
Thymus fragantissimus	T	V	71.0
Thymus fragantissimus	T	O	59.2
Thymus praecox subsp arcticus	T	O	85.7
Thymus pseudolanuginosus	T	W	20.9
Thymus pseudolanuginosus	T	O	94.8
Thymus serpyllum	T	W	38.4
Thymus serpyllum	T	O	100.0
Thymus vulgaris	T	V	80.4
Thymus vulgaris "Argenteus"	T	O	100.0
Thymus X citriodorus	T	R	100.0
Tiarella cordifolia	T	O	100.0
Trichosanthes kirilowii	T	O	24.4
Triticale sp.	T	O	20.6
Tropaeolum majus	T	O	43.7
Ulmus americana	T	R	28.9
Urtica dioica	T	S	43.2
Vaccinium angustifolium	T	S	42.4
Vaccinium angustifolium	T	W	59.2
Vaccinium macrocarpon	T	S	27.2
Vaccinium macrocarpon	T	S	21.6
Vaccinium macrocarpon	T	V	62.6
Vaccinium macrocarpon	T	S	62.6
Veronica officinalis	T	R	100.0
Viburnum trilobum Marsh.	T	O	38.6
Vicia villosa	T	W	58.9
Vitis sp.	T	S	24.7
Vitis sp.	T	S	22.8
Vitis sp.	T	S	21.7
Vitis sp.	T	S	20.5
Zea mays	T	S	

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Actinidia arguta	A	R	63.3
Actinidia arguta	A	O	46.3
Achillea millefolium	A	O	32.4
Achillea millefolium	A	R	26.3
Aconitum napellus	A	O	30.0
Acorus calamus	A	R	25.9
Adiantum pedatum	A	O	20.2
Adiantum pedatum	A	R	22.2
Agropyron repens	A	O	98.6
Agropyron repens	A	R	61.8
Alchemilla mollis	A	O	75.7
Alchemilla mollis	A	R	36.5
Allium porrum	A	R	39.7
Allium porrum	A	O	58.2
Allium cepa	A	O	51.0
Allium sativum	A	O	53.8
Allium schoenoprasum	A	O	74.6
Allium Tuberosum	A	O	69.5
Aloe vera	A	R	44.7
Aloe vera	A	O	55.6
Althaea officinalis	A	O	95.0
Althaea officinalis	A	R	33.4
Amaranthus retroflexus	A	R	74.5
Amaranthus retroflexus	A	O	98.4
Anethum graveolens	A	R	37.4
Anethum graveolens	A	O	58.7
Angelica archangelica	A	O	79.1
Aplum graveolens	A	R	27.9
Aplum graveolens	A	O	46.5
Aralia nudicaulis	A	O	89.3
Aralia nudicaulis	A	R	55.4
Arctium lappa	A	R	32.8
Arctium minus	A	R	72.5
Arctium minus	A	O	61.3
Armoracia rusticana	A	O	95.8
Aronia melanocarpa	A	R	39.8
Aronia melanocarpa	A	O	28.2
Artemisia Absinthium	A	R	51.7
Artemisia Absinthium	A	O	63.7
Artemisia dracunculus	A	O	45.4
Aster sp	A	R	41.8
Aster sp	A	O	91.5
Atropa belladonna	A	O	47.3
Atropa belladonna	A	R	31.7
Beckmannia eruciformis	A	R	40.5
Beckmannia eruciformis	A	O	60.6
Beta vulgaris	A	R	66.1



Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Beta vulgaris	A	O	79.5
Beta vulgaris spp. Maritima	A	O	63.3
Beta vulgaris spp. Maritima	A	R	59.1
Borago officinalis	A	O	40.9
Brassica napus	A	O	64.6
Brassica napus	A	R	21.1
Brassica oleracea	A	R	66.6
Brassica oleracea	A	O	68.6
Brassica rapa	A	O	99.0
Brassica rapa	A	R	99.3
Campanula rapunculus	A	R	59.0
Campanula rapunculus	A	O	50.6
Canna edulis	A	O	23.9
Capsella bursa-pastoris	A	R	49.0
Capsella bursa-pastoris	A	O	47.0
Capsicum annuum	A	R	29.1
Carum carvi	A	O	60.4
Chaerophyllum bulbosum	A	O	48.6
Chaerophyllum bulbosum	A	R	48.2
Chelidonium majus	A	O	35.5
Chelidonium majus	A	R	23.1
Chenopodium bonus-henricus	A	O	65.9
Chenopodium quinoa	A	R	62.3
Chenopodium quinoa	A	O	90.0
Cicer arietinum	A	O	82.4
Cichorium intybus	A	R	58.0
Cichorium intybus	A	O	81.7
Colx Lacryma-Jobi	A	R	32.6
Colx Lacryma-Jobi	A	O	43.4
Coriandrum sativum	A	R	26.9
Coriandrum sativum	A	O	65.0
Cornus canadensis	A	R	99.7
Cornus canadensis	A	O	60.6
Crataegus sp	A	R	25.9
Crataegus sp	A	O	28.2
Cryptotaenia canadensis	A	O	73.3
Cryptotaenia canadensis	A	R	36.1
Cymbopogon citratus	A	O	32.7
Cyperus esculentus	A	R	41.3
Cyperus esculentus	A	O	33.8
Daucus carota	A	R	63.6
Daucus carota	A	O	43.4
Dirca palustris	A	O	61.1
Dirca palustris	A	R	46.6
Echinacea purpurea	A	O	54.8
Eleusine coracana	A	O	36.4
Fagopyrum esculentum	A	R	37.9

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Fagopyrum esculentum	A	O	43.3
Fagopyrum tataricum	A	R	28.4
Fagopyrum tataricum	A	O	32.8
Foeniculum vulgare	A	O	48.8
Fragaria x ananassa	A	R	46.3
Fragaria x ananassa	A	O	78.8
Galinsoga ciliata	A	O	46.0
Galium odoratum	A	R	59.8
Galium odoratum	A	O	79.5
Gaultheria hispidula	A	R	53.4
Gaultheria hispidula	A	O	54.3
Glechoma hederacea	A	O	23.4
Glechoma hederacea	A	R	26.9
Glycine max	A	R	20.5
Glycine max	A	O	73.8
Glycyrrhiza glabra	A	O	57.7
Glycyrrhiza glabra	A	R	53.8
Guizotia abyssinica	A	R	29.6
Guizotia abyssinica	A	O	78.6
Hamamelis virginiana	A	R	41.2
Hedeoma pulegioides	A	O	26.3
Helleborus niger	A	O	36.9
Helleborus niger	A	R	35.4
Hordeum hexastichon	A	R	31.1
Hyssopus officinalis	A	R	84.8
Hyssopus officinalis	A	O	85.8
Inula helenium	A	O	58.4
Inula helenium	A	R	32.7
Ipomoea Batatas	A	O	29.6
Lathyrus sativus	A	R	31.7
Lathyrus sativus	A	O	71.1
Lathyrus sylvestris	A	R	65.3
Lathyrus sylvestris	A	O	66.4
Laurus nobilis	A	R	43.1
Laurus nobilis	A	O	46.1
Leonurus cardiaca	A	O	63.3
Leonurus cardiaca	A	R	24.5
Levisticum officinale	A	R	20.9
Levisticum officinale	A	O	43.8
Lotus corniculatus	A	R	59.0
Lotus corniculatus	A	O	87.4
Lycopersicon esculentum	A	R	28.0
Malva sylvestris	A	O	23.1
Medicago sativa	A	R	63.8
Medicago sativa	A	O	53.6
Melilotus albus	A	O	93.7
Melilotus albus	A	R	80.1

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Melissa officinalis	A	R	40.8
Melissa officinalis	A	O	69.5
Mentha piperita	A	R	61.0
Mentha piperita	A	O	73.2
Mentha pulegium	A	O	69.0
Mentha spicata	A	O	94.6
Mentha suaveolens	A	O	55.2
Nepeta cataria	A	R	45.9
Nepeta cataria	A	O	66.3
Nicotiana tabacum	A	R	46.8
Oenothera biennis	A	R	69.8
Oenothera biennis	A	O	47.3
Origanum majorana	A	O	38.5
Origanum vulgare	A	R	43.3
Origanum vulgare	A	O	68.2
Panax quinquefolius	A	R	41.7
Panax quinquefolius	A	O	83.7
Pastinaca sativa	A	O	62.8
Pastinaca sativa	A	R	44.2
Perilla frutescens	A	O	66.2
Petasites japonicus	A	R	22.6
Petasites japonicus	A	O	25.5
Petroselinum crispum	A	O	79.1
Petroselinum crispum	A	R	32.3
Phalaris canariensis	A	R	45.4
Phaseolus vulgaris	A	R	31.0
Phaseolus Vulgaris	A	O	61.8
Pimpinella anisum	A	O	38.1
Plantago major	A	O	95.1
Plectranthus sp.	A	R	76.9
Plectranthus sp.	A	O	58.0
Polygonum aviculare	A	R	28.0
Polygonum aviculare	A	O	49.7
Potentilla anserina	A	R	26.6
Poterium Sanguisorba	A	O	58.0
Pteridium aquilinum	A	R	32.9
Raphanus raphanistrum	A	R	70.7
Raphanus raphanistrum	A	O	63.2
Raphanus sativus	A	R	90.9
Raphanus sativus	A	O	95.4
Rheum rhabarbarum	A	R	26.0
Rheum rhabarbarum	A	O	62.9
Ribes nigrum	A	O	62.9
Ribes Sylvestre	A	R	34.5
Ribes Sylvestre	A	O	80.3
Ricinus communis	A	R	89.9
Ricinus communis	A	O	81.0

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Rosa rugosa	A	R	32.9
Rosa rugosa	A	O	35.9
Rosmarinus officinalis	A	O	78.2
Rubus allegheniensis	A	O	76.8
Rubus canadensis	A	R	40.7
Rubus canadensis	A	O	72.6
Rubus idaeus	A	R	35.5
Rubus idaeus	A	O	97.9
Rumex Acetosa	A	O	32.0
Rumex acetosella	A	R	73.2
Rumex acetosella	A	O	56.9
Rumex crispus	A	R	49.7
Rumex crispus	A	O	37.5
Rumex Scutatus	A	O	53.1
Rumex Scutatus	A	R	25.9
Ruta graveolens	A	O	56.2
Salix purpurea	A	R	71.4
Salix purpurea	A	O	24.7
Salvia elegans	A	O	67.6
Salvia officinalis	A	O	70.5
Salvia officinalis	A	R	56.6
Salvia sclarea	A	O	70.1
Santolina chamaecyparissus	A	R	59.5
Santolina chamaecyparissus	A	O	59.2
Satureja montana	A	O	71.7
Scorzonera hispanica	A	O	21.9
Secale cereale	A	R	33.3
Senecio vulgaris	A	R	47.5
Senecio vulgaris	A	O	20.8
Setaria italica	A	R	48.6
Setaria italica	A	O	37.1
Sium Sissarum	A	O	33.8
Sium Sissarum	A	R	62.5
Solanum tuberosum	A	O	53.6
Solidago sp	A	R	54.0
Solidago sp	A	O	95.1
Sonchus oleraceus	A	R	59.4
Sonchus oleraceus	A	O	69.2
Sorghum dochna	A	R	33.9
Sorghum dochna	A	O	55.3
Sorghum durra	A	R	61.3
Sorghum durra	A	O	83.9
Stachys byzantina	A	R	61.6
Stachys byzantina	A	O	73.8
Stellaria graminea	A	R	40.1
Stellaria graminea	A	O	55.8
Stellaria media	A	R	70.9

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
<i>Stellaria media</i>	A	O	51.4
<i>Tanacetum cinerariifolium</i>	A	O	67.7
<i>Tanacetum parthenium</i>	A	R	50.8
<i>Tanacetum parthenium</i>	A	O	81.9
<i>Tanacetum vulgare</i>	A	R	56.2
<i>Tanacetum vulgare</i>	A	O	51.9
<i>Taraxacum officinale</i>	A	O	98.7
<i>Taraxacum officinale</i>	A	R	82.1
<i>Teucrium chamaedrys</i>	A	O	62.2
<i>Thymus praecox</i> subsp arcticus	A	R	42.0
<i>Thymus praecox</i> subsp arcticus	A	O	54.2
<i>Thymus serpyllum</i>	A	O	93.4
<i>Thymus serpyllum</i>	A	R	57.5
<i>Thymus vulgaris</i>	A	R	68.7
<i>Thymus vulgaris</i>	A	O	55.8
<i>Thymus x citriodorus</i>	A	O	72.8
<i>Thymus x citriodorus</i>	A	R	31.9
<i>Tragopogon porifolius</i>	A	O	67.2
<i>Tragopogon porifolius</i>	A	R	37.0
<i>Tropaeolum minus</i>	A	O	62.8
<i>Typha latifolia</i>	A	R	77.5
<i>Typha latifolia</i>	A	O	70.6
<i>Vaccinium Corymbosum</i>	A	O	74.7
<i>Vaccinium Corymbosum</i>	A	R	69.5
<i>Vaccinium macrocarpon</i>	A	R	71.4
<i>Vaccinium macrocarpon</i>	A	O	78.9
<i>Verbascum thapsus</i>	A	O	76.8
<i>Verbascum thapsus</i>	A	R	62.0
<i>Viola salvia</i>	A	R	79.2
<i>Viola salvia</i>	A	O	68.7
<i>Viola villosa</i>	A	O	74.5
<i>Viola villosa</i>	A	R	61.0
<i>Vinca minor</i>	A	O	46.7
<i>Vinca minor</i>	A	R	31.9
<i>Vitis sp.</i>	A	R	89.5
<i>Vitis sp.</i>	A	O	54.6
<i>Zea mays</i>	A	R	52.0
<i>Zea mays</i>	A	O	93.8
<i>Achillea millefolium</i>	G	O	45.8
<i>Achillea millefolium</i>	G	R	24.6
<i>Aconitum napellus</i>	G	R	28.7
<i>Acorus calamus</i>	G	R	37.5
<i>Acorus calamus</i>	G	O	32.8
<i>Actinidia arguta</i>	G	R	47.8
<i>Actinidia arguta</i>	G	O	78.4
<i>Adiantum pedatum</i>	G	O	45.9
<i>Adiantum pedatum</i>	G	R	27.0

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Agropyron repens	G	O	83.0
Agropyron repens	G	R	31.9
Alchemilla mollis	G	O	71.0
Allium ampeloprasum	G	R	36.8
Allium ampeloprasum	G	O	62.2
Allium cepa	G	R	56.1
Allium cepa	G	O	64.4
Allium sativum	G	O	65.2
Allium schoenoprasum	G	O	78.4
Allium tuberosum	G	O	46.6
Aloe vera	G	O	45.7
Athaca officinalis	G	O	50.0
athaea officinalis	G	R	42.2
Amaranthus retroflexus	G	R	41.7
Amaranthus retroflexus	G	O	90.3
Anethum graveolens	G	R	31.3
Anethum graveolens	G	O	60.5
Angelica archangelica	G	O	64.3
Angelica archangelica	G	R	63.3
Apium graveolens	G	O	57.0
Apium graveolens	G	R	28.4
Aralia nudicaulis	G	O	71.8
Aralia nudicaulis	G	R	38.2
Arotium minus	G	R	42.4
Arctium minus	G	O	41.5
Armoracia rusticana	G	O	67.1
Aronia melanocarpa	G	R	32.0
Aronia melanocarpa	G	O	70.0
Artemisia absinthium	G	R	63.1
Artemisia absinthium	G	O	61.1
Asclepias incarnata	G	R	58.4
Asclepias incarnata	G	O	63.3
Asparagus officinalis	G	R	61.2
Asparagus officinalis	G	O	86.3
Aster Linné	G	O	57.5
Aster sp	G	R	48.7
Aster sp	G	O	94.5
Atropa belladonna	G	R	29.2
Beckmannia eruciformis	G	O	32.9
Beta vulgaris	G	R	47.9
Beta vulgaris	G	O	61.9
Borago officinalis	G	O	51.9
Brassica Napus	G	O	92.1
Brassica napus	G	R	30.2
Brassica oleracea	G	R	79.0
Brassica oleracea	G	O	85.4
Brassica rapa	G	O	81.7

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
<i>Calamagrostis arundiflora</i>	G	R	59.7
<i>Campanula rapunculus</i>	G	R	65.4
<i>Campanula rapunculus</i>	G	O	54.8
<i>Canna edulis</i>	G	O	30.0
<i>Capsella bursa-pastoris</i>	G	R	48.1
<i>Capsella bursa-pastoris</i>	G	O	50.9
<i>Carum carvi</i>	G	O	62.4
<i>Cerastium tomentosum</i>	G	R	45.1
<i>Chaerophyllum bulbosum</i>	G	O	30.0
<i>Chaerophyllum bulbosum</i>	G	R	54.5
<i>Chelidonium majus</i>	G	O	43.2
<i>Chelidonium majus</i>	G	R	30.7
<i>Chichorium endivia</i>	G	O	64.2
<i>Chichorium endivia subsp endivia</i>	G	R	48.3
<i>Chichorium endivia subsp endivia</i>	G	O	67.0
<i>Cichorium intybus</i>	G	O	78.3
<i>Cichorium intybus</i>	G	R	87.8
<i>Circium arvense</i>	G	R	94.1
<i>Circium arvense</i>	G	O	58.7
<i>Coix Lacryma-Jobi</i>	G	R	35.7
<i>Coix Lacryma-Jobi</i>	G	O	31.4
<i>Cornus canadensis</i>	G	R	61.3
<i>Cornus canadensis</i>	G	O	80.6
<i>Crataegus submollis</i>	G	R	21.0
<i>Crataegus submollis</i>	G	O	44.4
<i>Cymbopogon citratus</i>	G	R	39.6
<i>Cyperus esculentus</i>	G	R	62.4
<i>Cyperus esculentus</i>	G	O	49.6
<i>Daucus carota</i>	G	O	36.3
<i>Daucus carota</i>	G	R	44.3
<i>Dirca palustris</i>	G	O	85.1
<i>Dirca palustris</i>	G	R	47.1
<i>Echinacea purpurea</i>	G	O	36.4
<i>Eleusine coracana</i>	G	O	65.4
<i>Eleusine coracana</i>	G	R	36.8
<i>Erigeron speciosus</i>	G	R	39.1
<i>Erysimum perofskianum</i>	G	R	58.7
<i>Erysimum perofskianum</i>	G	O	93.1
<i>Fagopyrum esculentum</i>	G	R	36.4
<i>Fagopyrum esculentum</i>	G	O	41.0
<i>Fagopyrum tataricum</i>	G	R	43.3
<i>Fagopyrum tataricum</i>	G	O	29.1
<i>Galinsoga ciliata</i>	G	R	49.8
<i>Galinsoga ciliata</i>	G	O	58.0
<i>Galium odoratum</i>	G	R	65.1
<i>Galium odoratum</i>	G	O	94.2
<i>Gaultheria hispidula</i>	G	R	55.7

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Gaultheria hispidula	G	O	50.6
Gaultheria procumbens	G	R	53.3
Gaultheria procumbens	G	O	67.7
Glechoma hederacea	G	O	70.9
Glechoma hederacea	G	R	25.3
Glycine max	G	R	78.6
Glycine max	G	O	85.9
Glycyrrhiza glabra	G	R	59.1
Glycyrrhiza glabra	G	O	60.6
Guizotia abyssinica	G	R	41.8
Guizotia abyssinica	G	O	74.3
Hamamelis virginiana	G	R	44.2
Helianthus strumosus	G	O	40.6
Helianthus strumosus	G	R	61.4
Helianthus tuberosus	G	O	75.1
Helianthus tuberosus	G	R	30.1
Helichrysum thianschanicum	G	R	56.3
Helichrysum thianschanicum	G	O	84.0
Helleborus niger	G	O	38.8
Helleborus niger	G	R	25.9
Hordeum hexastichon	G	O	62.3
Hordeum hexastichon	G	R	29.4
Hyssopus officinalis	G	R	64.7
Hyssopus officinalis	G	O	71.9
Inula helenium	G	O	29.4
Inula helenium	G	R	25.7
Ipomoea batatas	G	O	38.9
Lactuca sativa	G	O	70.4
Lactuca sativa	G	R	49.9
Lathyrus sativus	G	O	62.8
Lathyrus sativus	G	R	29.0
Lathyrus sylvestris	G	R	52.1
Lathyrus sylvestris	G	O	52.5
Laurus nobilis	G	R	27.1
Laurus nobilis	G	O	61.0
Lavandula angustifolia	G	R	51.9
Lavandula angustifolia	G	O	57.0
Ledum groenlandicum	G	O	73.4
Ledum groenlandicum	G	R	52.6
Leonurus cardiaca	G	O	88.8
Leonurus cardiaca	G	R	38.5
Levistecum officinale	G	R	51.2
Levistecum officinale	G	O	78.3
Lotus corniculatus	G	O	86.8
Lotus corniculatus	G	R	50.3
Lupinus polyphyllus	G	R	78.9
Lupinus polyphyllus	G	O	66.7



Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Malus hupehensis	G	R	52.7
Malus hupehensis	G	O	64.1
Malva sylvestris	G	R	26.2
Medicago sativa	G	R	43.4
Medicago sativa	G	O	92.5
Mellilotus albus	G	R	75.5
Mellilotus albus	G	O	70.0
Melissa officinalis	G	O	81.1
Mentha piperita	G	O	54.4
Mentha pulegium	G	O	59.4
Mentha spicata	G	R	38.8
Mentha spicata	G	O	83.0
Mentha suaveolens	G	O	56.5
Nepeta cataria	G	O	56.2
Ocimum basilicum	G	O	60.3
Oenothera biennis	G	R	39.2
Oenothera biennis	G	O	44.3
Origanum majorana	G	O	44.7
Origanum vulgare	G	O	58.1
Origanum vulgare	G	R	22.9
Oryza Sativa	G	R	71.8
Oryza Sativa	G	O	39.8
Oxalis Deppel	G	R	80.1
Oxalis Deppel	G	O	28.8
Oxyria digyna	G	R	51.8
Oxyria digyna	G	O	36.2
Panax quinquefolius	G	R	72.1
Panax quinquefolius	G	O	81.6
Panicum miliaceum	G	O	93.4
Passiflora caerulea	G	R	33.2
Passiflora caerulea	G	O	63.2
Pastinaca sativa	G	O	54.0
Pennisetum alopecuroides	G	R	61.0
Petasites japonicus	G	O	50.0
Petroselinum crispum	G	R	49.1
Petroselinum crispum	G	O	52.2
Phalaris canariensis	G	O	72.1
Phaseolus vulgaris	G	R	21.8
Pimpinella anisum	G	O	86.2
Pisum sativum	G	O	61.6
Pisum sativum	G	R	57.5
Plantago major	G	O	91.9
Plectranthus sp.	G	R	53.0
Plectranthus sp.	G	O	73.0
Polygonum aviculare	G	R	32.2
Polygonum aviculare	G	O	36.4
Portulaca oleracea	G	R	82.1

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Portulaca oleracea	G	O	63.3
Potentilla anserina	G	R	26.3
Poterium sanguisorba	G	O	79.9
Prunella vulgaris	G	R	68.8
Prunella vulgaris	G	O	57.4
Raphanus Raphanistrum	G	R	91.9
Raphanus Raphanistrum	G	O	55.2
Rhaphanus sativus	G	R	55.7
Rhaphanus sativus	G	O	78.4
Rheum rhabarbarum	G	R	27.1
Rheum rhabarbarum	G	O	56.8
Ribes nigrum	G	O	70.7
Ribes nigrum	G	R	37.9
Ribes nigrum	G	O	98.9
Ribes Sylvestris	G	R	25.2
Ribes Sylvestris	G	O	65.7
Ricinus communis	G	R	39.3
Ricinus communis	G	O	84.3
Rosmarinus officinalis	G	O	68.6
Rubus idaeus	G	O	26.3
Rumex crispus	G	R	54.2
Rumex crispus	G	O	62.0
Rumex scutatus	G	O	38.1
Ruta graveolens	G	O	85.0
Salix purpurea	G	R	74.7
Salix purpurea	G	O	38.5
Salvia elegans	G	O	54.8
Salvia officinalis	G	R	89.7
Salvia officinalis	G	O	84.9
Salvia sclarea	G	O	61.8
Sambucus ebulus	G	R	48.2
Sambucus ebulus	G	O	98.2
Santolina chamaecyparissus	G	R	61.3
Santolina chamaecyparissus	G	O	88.2
Saponaria officinalis	G	R	52.9
Saponaria officinalis	G	O	71.8
Satureja hortensis	G	O	44.9
Satureja montana	G	O	76.8
Scorzonera hispanica	G	R	32.9
Scutellaria lateriflora	G	O	49.8
Scutellaria lateriflora	G	R	39.6
Secale cereale	G	R	37.0
Senecio vulgaris	G	R	31.0
Senecio vulgaris	G	O	47.0
Setaria italica	G	R	44.9
Setaria italica	G	O	42.0
Silene vulgaris	G	R	76.8

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Silene vulgaris	G	O	92.2
Sium sisarum	G	O	58.9
Sium sisarum	G	R	66.6
solanum melongena	G	R	66.8
Solanum tuberosum	G	O	47.4
Solidago sp	G	R	53.6
Solidago sp	G	O	88.3
Sonchus oleraceus	G	R	82.5
Sonchus oleraceus	G	O	55.5
Sorghum dochna	G	R	67.4
Sorghum dochna	G	O	73.7
sorghum durra	G	R	24.8
sorghum durra	G	O	42.3
Sorghum sudanense	G	R	35.5
Sorghum sudanense	G	O	66.3
Stachys byzantina	G	R	75.5
Stachys byzantina	G	O	66.7
Stellaria graminea	G	R	36.9
Stellaria graminea	G	O	40.1
Stellaria media	G	R	31.2
Stellaria media	G	O	51.1
Symphytum officinale	G	R	90.2
Symphytum officinale	G	O	90.8
Tanacetum cinerariifolium	G	O	76.1
Tanacetum parthenium	G	R	70.1
Tanacetum parthenium	G	O	62.4
Tanacetum vulgare	G	R	38.2
Tanacetum vulgare	G	O	72.5
Taraxacum officinale	G	O	100.0
Taraxacum officinale	G	R	78.6
Teucrium chamaedrys	G	O	50.5
Teucrium chamaedrys	G	R	40.1
Thymus fragantissimus	G	R	81.4
Thymus fragantissimus	G	O	58.4
Thymus praecox subsp arcticus	G	R	49.2
Thymus praecox subsp arcticus	G	O	62.4
Thymus serpyllum	G	O	70.4
Thymus serpyllum	G	R	54.9
Thymus vulgaris	G	R	55.1
Thymus x citriodorus	G	O	47.1
Tiarella cordifolia	G	O	52.8
Tropaeolum majus	G	R	22.2
Tropaeolum majus	G	O	59.1
Typha latifolia	G	R	65.1
Typha latifolia	G	O	46.9
Vaccinium macrocarpon	G	O	76.7
Vaccinium corymbosum	G	O	54.5

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Vaccinium corymbosum	G	R	82.9
Vaccinium angustifolium	G	R	27.9
Vaccinium angustifolium	G	O	66.8
Vaccinium angustifolium	G	R	40.7
Vaccinium macrocarpon	G	O	35.4
Veratrum viride	G	O	72.9
Verbascum thapsus	G	R	60.5
Verbascum thapsus	G	R	52.6
Viburnum trilobum	G	R	36.6
Vicia sativa	G	O	83.2
Vicia sativa	G	O	77.3
Vicia villosa	G	R	46.8
Vicia villosa	G	O	63.0
Vinca minor	G	R	30.8
Vinca minor	G	R	52.7
Vitis sp.	G	O	99.2
Vitis sp.	G	R	45.1
Zea mays	G	O	55.3
Zea mays	T	O	46.0
Achillea millefolium	T	R	32.9
Achillea millefolium	T	O	35.2
Aconitum napellus	T	R	31.9
Aconitum napellus	T	O	40.6
Acorus calamus	T	R	26.9
Acorus calamus	T	R	80.0
Actinidia arguta	T	O	66.3
Actinidia arguta	T	O	49.4
Adiantum pedatum	T	O	37.5
Agrimonia eupatoria	T	O	75.0
Agropyron repens	T	R	50.0
Agropyron repens	T	O	71.6
Alchemilla mollis	T	R	81.1
Alchemilla mollis	T	O	84.4
Allium ampeloprasum	T	O	49.2
Allium cepa	T	R	30.1
Allium cepa	T	O	63.8
Allium sativum	T	O	79.6
Allium schoenoprasum	T	O	55.8
Allium tuberosum	T	R	29.6
Allium tuberosum	T	R	30.3
Aloe vera	T	O	42.7
Aloe vera	T	R	42.5
Althaea officinalis	T	O	46.3
Althaea officinalis	T	R	37.3
Amaranthus candatus	T	O	60.0
Amaranthus candatus	T	R	33.2
Amaranthus retroflexus	T	O	94.3

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
angelica archangelica	T	O	37.4
angelica archangelica	T	R	55.7
Anthriscus cerefolium	T	O	88.5
Anthriscus cerefolium	T	R	69.6
Apium graveolens	T	R	22.0
Aralia nudicaulis	T	O	77.5
Aralia nudicaulis	T	R	28.4
Arctium minus	T	R	54.4
Arctium minus	T	O	89.5
Annoracia rusticana	T	O	84.9
Aronia melanocarpa	T	R	61.9
Aronia melanocarpa	T	O	84.5
Artemisia absinthium	T	R	29.0
Artemisia absinthium	T	O	55.9
Artemisia dracunculus	T	O	98.7
Artium lappa	T	O	26.0
Asclepias incarnata	T	R	58.5
Asclepias incarnata	T	O	68.8
Aster spp	T	R	40.5
Aster spp	T	O	86.7
Atropa belladonna	T	O	61.4
Atropa belladonna	T	R	30.4
Avena sativa	T	R	38.0
Cyperus esculentus	T	O	47.8
Cyperus esculentus	T	R	49.5
Beta vulgaris	T	O	62.2
Borago officinalis	T	O	39.1
Brassica Napus	T	O	89.3
Brassica nigra	T	R	26.9
Brassica oleracea	T	O	63.9
Brassica oleracea	T	R	76.2
Brassica oleracea	T	O	69.9
Bromus inermis	T	R	79.8
Bromus inermis	T	O	88.1
Calamagrostis arundiflora m	T	R	62.8
Calendula officinalis	T	R	64.6
Canna edulis	T	O	47.5
Capsella bursa-pastoris	T	R	48.7
Capsella bursa-pastoris	T	O	40.9
Carex morrowii	T	R	45.7
Carex morrowii	T	O	70.3
Carum carvi	T	R	22.7
Cerastium tomentosum	T	R	46.8
Chaerophyllum bulbosum	T	R	22.9
Chaerophyllum bulbosum	T	O	40.9
Chelidonium majus	T	O	60.7
Chelidonium majus	T	R	24.0

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Chenopodium quinoa	T	R	41.5
Chenopodium quinoa	T	O	88.7
Cicer arietinum	T	R	20.4
Cicer arietinum	T	O	84.2
Cichorium endivia	T	O	78.3
Cichorium intybus	T	O	81.7
Cichorium intybus	T	R	73.3
Cirsium arvense	T	R	50.0
Cirsium arvense	T	O	74.8
Citrullus colocynthus	T	O	62.5
Citrullus colocynthis	T	R	57.3
Coix Lacryma-Jobi	T	R	33.7
Coriandrum sativum	T	O	59.2
Coriandrum sativum	T	R	37.1
Cornus canadensis	T	R	82.6
Cornus canadensis	T	O	47.7
Crataegus sp	T	O	33.9
Crataegus submollis	T	O	64.3
Cryptotaenia canadensis	T	O	60.9
Cryptotaenia canadensis	T	R	41.5
Cymbopogon citratus	T	R	65.2
Cymbopogon citratus	T	O	65.6
Daucus carota	T	R	27.5
Dioscorea batatas	T	O	42.3
Dirca palustris	T	O	57.4
Dirca palustris	T	R	29.5
Echinacea purpurea	T	O	83.0
Eleusine coracana	T	O	70.3
Erysimum perofskianum	T	R	90.4
Erysimum perofskianum	T	O	92.2
Fagopyrum esculentum	T	R	61.6
Fagopyrum esculentum	T	O	39.0
Fagopyrum tataricum	T	R	38.7
Fagopyrum tataricum	T	O	25.6
Foeniculum vulgare	T	O	79.0
Fragaria x-ananassa	T	O	26.0
Frangula alnus	T	O	27.0
Frangula alnus	T	R	45.3
Galinsoga ciliata	T	R	34.6
Galinsoga ciliata	T	O	60.3
Galium odoratum	T	R	98.8
Galium odoratum	T	O	96.1
Gaultheria hispidula	T	O	33.1
Gaultheria procumbens	T	O	84.2
Glechoma hederacea	T	O	70.1
Glechoma hederacea	T	R	38.5
Glycine max	T	O	54.8

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Glycine max	T	R	38.0
Glycine max	T	O	88.7
Glycyrrhiza glabra	T	O	65.5
Glycyrrhiza glabra	T	R	40.5
Guizotia abyssinica	T	R	48.1
Guizotia abyssinica	T	O	84.1
Hamamelis virginiana	T	R	35.9
Hedeoma pulegioides	T	R	24.8
Helianthus strumosus	T	O	32.9
Helianthus strumosus	T	R	31.0
Helianthus tuberosus	T	R	42.8
Helianthus tuberosus	T	O	72.1
Helichrysum angustifolium	T	R	69.6
Helichrysum angustifolium	T	O	84.9
Helichrysum thianschanicum	T	R	86.2
Helichrysum thianschanicum	T	O	80.7
Humulus lupulus	T	O	71.3
Humulus lupulus	T	R	60.6
Hyoscyamus niger	T	O	88.0
Hyssopus officinalis	T	R	73.3
Hyssopus officinalis	T	O	76.9
Inula helenium	T	O	93.3
Inula helenium	T	R	63.5
Ipomoea batatas	T	O	99.9
Juniperus communis	T	R	26.9
Kochia scoparia	T	O	78.7
Koeleria glauca	T	R	89.1
Koeleria glauca	T	O	67.7
Lactuca sativa	T	O	75.2
Lactuca sativa	T	R	55.3
Lathyrus Sativus	T	R	23.3
Lathyrus Sativus	T	O	70.8
Lathyrus sylvestris	T	R	77.1
Lathyrus sylvestris	T	O	53.0
Laurus nobilis	T	R	61.8
Laurus nobilis	T	O	92.7
Lavandula angustifolia	T	R	54.1
Lavandula angustifolia	T	O	84.4
Lavandula latifolia	T	R	55.4
Lavandula latifolia	T	O	82.9
Ledum groenlandicum	T	O	96.1
Ledum groenlandicum	T	R	74.0
Lens culinaris subsp culinaris	T	R	38.4
Lens culinaris subsp culinaris	T	O	100.0
Levisticum officinale	T	R	38.8
Levisticum officinale	T	O	73.4
Lotus corniculatus	T	O	81.6

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Lotus corniculatus	T	R	52.0
Lupinus polyphyllus	T	R	53.3
Lupinus polyphyllus	T	O	64.4
Luzula sylvatica	T	R	62.8
Malus	T	O	70.9
Malus hupehensis	T	R	77.6
Malus hupehensis	T	O	72.4
Medicago sativa	T	R	41.0
Medicago sativa	T	O	84.1
Melilotus officinalis	T	R	44.0
Melilotus officinalis	T	O	90.8
Mentha piperita	T	O	20.6
Menyanthes trifoliata	T	R	20.8
Miscanthus sinensis	T	R	89.0
Miscanthus sinensis	T	O	73.7
Nepeta cataria	T	R	25.3
Ocimum Basilicum	T	O	85.7
Oenothera biennis	T	R	40.2
Oenothera biennis	T	O	49.2
Onobrychis viciifolia	T	R	53.2
Onobrychis viciifolia	T	O	49.2
Origanum vulgare	T	R	50.8
Origanum vulgare	T	O	45.1
Oryza sativa	T	R	40.3
Oryza sativa	T	O	28.8
Oxalis Deppel	T	R	35.2
Oxalis Deppel	T	O	42.1
oxyria digyna	T	R	42.8
oxyria digyna	T	O	52.3
Panax quinquefolius	T	O	78.8
Panicum miliaceum	T	R	52.6
Passiflora caerulea	T	O	77.5
Pastinaca sativa	T	R	52.0
Pastinaca sativa	T	O	31.8
Pennisetum alopecuroides	T	O	73.4
Perilla frutescens	T	R	68.0
Perilla frutescens	T	O	74.4
Pertoselinum crispum	T	R	65.2
Petasites Japonicus	T	R	31.3
Petasites Japonicus	T	O	24.8
Pertoselinum crispum	T	O	45.2
Phalaris canariensis	T	R	33.6
Phalaris canariensis	T	O	88.5
Phaseolus vulgaris	T	O	57.0
Physalis pruinosa	T	O	58.2
Pimpinella anisum	T	O	95.9
Pimpinella anisum	T	R	91.7



Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Pisum sativum	T	R	30.5
Pisum sativum	T	O	69.3
Plantago major	T	O	93.8
Plantago major	T	R	20.2
Plectranthus sp.	T	R	44.4
Plectranthus sp.	T	O	50.8
Polygonum aviculare	T	R	47.9
Polygonum aviculare	T	O	72.7
Polygonum aviculare	T	R	21.8
Potentilla anserina	T	R	84.3
Prunella vulgaris	T	R	84.3
Prunella vulgaris	T	O	56.7
Pteridium aquilinum	T	R	32.6
Raphanus raphanistrum	T	R	68.6
Raphanus raphanistrum	T	O	77.0
Raphanus sativus	T	R	41.0
Raphanus sativus	T	O	69.1
Raphanus sativus	T	O	87.9
Ribes Sylvestre	T	R	40.2
Ribes Sylvestre	T	O	45.2
Ribes Sylvestre	T	R	22.4
Ricinus communis	T	O	72.0
Ricinus communis	T	O	50.5
Ribes nigrum	T	R	70.1
Ribes nigrum	T	O	69.8
Rosmarinus officinalis	T	O	37.2
Rubus canadensis	T	R	57.9
Rubus canadensis	T	O	64.9
Rubus idaeus	T	R	94.9
Rubus idaeus	T	O	74.9
Rumex scutatus	T	O	20.7
Rumex scutatus	T	R	40.1
Rumex acetosella	T	O	42.0
Rumex acetosella	T	R	40.7
Rumex crispus	T	O	51.2
Rumex crispus	T	O	91.2
Ruta graveolens	T	O	55.5
Salix purpurea	T	R	51.2
Salix purpurea	T	O	64.7
Salvia officinalis	T	O	66.6
Salvia officinalis	T	O	92.5
Sambucus canadensis	T	R	64.0
Sambucus canadensis	T	O	68.4
Sanguisorba minor	T	O	84.4
Santolina chamaecyparissus	T	R	33.9
Santolina chamaecyparissus	T	O	59.3
Saponaria officinalis	T	R	80.4
Saponaria officinalis	T	O	26.5
Satureja hortensis	T	O	

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Satureja hortensis	T	R	23.0
Satureja montana	T	R	57.2
Satureja montana	T	O	43.5
Satureja repandra	T	R	47.1
Satureja repandra	T	O	66.3
Scutellaria lateriflora	T	O	20.3
Scutellaria lateriflora	T	R	33.8
Secale cereale	T	R	28.5
Senecio vulgaris	T	R	34.0
Setaria italica	T	R	40.7
Silene vulgaris	T	R	66.3
Silene vulgaris	T	O	99.7
Slum sisarum	T	O	90.7
Slum sisarum	T	R	39.6
Solidago sp	T	R	44.3
Solidago sp	T	O	73.6
Sonchus oleraceus	T	R	53.7
Sonchus oleraceus	T	O	38.9
Sorghum cafrorum	T	R	98.4
Sorghum cafrorum	T	O	80.1
Sorghum dochna	T	R	95.3
Sorghum dochna	T	O	70.3
Sorghum dochna	T	R	98.5
Sorghum dochna	T	O	85.3
Sorghum dura	T	R	88.5
Sorghum dura	T	O	81.7
Sorghum sudanense	T	R	34.7
Stachys affinis	T	O	75.7
Stachys affinis	T	R	33.5
Stachys byzantina	T	R	60.8
Stachys byzantina	T	O	77.5
Stellaria graminea	T	R	37.5
Stellaria graminea	T	O	54.7
Stellaria media	T	R	28.0
Stellaria media	T	O	49.0
Stipa capitata	T	R	43.4
Symphytum officinale	T	R	55.1
Symphytum officinale	T	O	64.0
Tanacetum cinerarifolium	T	O	65.5
Tanacetum parthenium	T	R	45.2
Tanacetum parthenium	T	O	54.7
Tanacetum vulgare	T	R	59.8
Tanacetum vulgare	T	O	88.0
Taraxacum officinale	T	O	100.0
Taraxacum officinale	T	R	91.3
Teucrium chamaedrys	T	O	60.8
Teucrium chamaedrys L.	T	R	69.2

Table 8  
Cath L

Nom latin	Stress	Extrait	Inhibition (%)
Thymus fragantissimus	T	R	97.8
Thymus fragantissimus	T	O	81.7
Thymus praecox subsp arcticus	T	R	36.1
Thymus praecox subsp arcticus	T	O	31.8
Thymus pseudolanuginosus	T	R	33.9
Thymus pseudolanuginosus	T	O	43.7
Thymus serpyllum	T	R	39.2
Thymus serpyllum	T	O	68.6
Thymus X citriodorus	T	O	70.9
Thymus X citriodorus	T	R	46.1
Thymus X citriodorus	T	O	72.0
Thymus cordifolia	T	O	40.9
Tragopogon porrifolius	T	R	20.5
Tragopogon porrifolius	T	O	88.2
Triticosecala spp.	T	R	31.4
Triticum aestivum	T	O	33.8
Triticum aestivum	T	R	29.2
Tropaeolum majus	T	O	20.9
Tropaeolum majus	T	R	67.0
Typha latifolia	T	O	56.0
Typha latifolia	T	R	77.8
Urtica dioica	T	O	75.6
Urtica dioica	T	R	58.6
Vaccinium angustifolium	T	R	20.1
Vaccinium macrocarpon	T	O	41.7
Vaccinium macrocarpon	T	R	57.1
Veratrum viride	T	O	26.8
Veratrum viride	T	R	72.8
Verbascum thapsus	T	R	56.0
Verbascum thapsus	T	O	49.5
Viburnum trilobum	T	O	58.8
Viburnum trilobum	T	R	73.9
Vicia sativa	T	R	79.2
Vicia villosa	T	O	70.9
Vicia villosa	T	R	21.5
Vinca minor	T	O	79.7
Vitis sp.	T	R	97.4
Vitis sp.	T	O	83.5
Zea mays	T	O	58.2
Zea mays	T	R	

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Achillea millefolium	A	O	27.6
Aconitum napellus	A	O	74.0
Acorus calamus	A	O	74.8
Actinidia arguta	A	R	28.1
Actinidia arguta	A	O	96.6
Agropyron repens	A	O	98.0
Alchemilla mollis	A	O	61.3
Alchemilla mollis	A	R	95.8
Allium cepa	A	O	80.6
Allium porrum	A	R	30.9
Allium porrum	A	O	87.5
Allium sativum	A	O	71.2
Allium schoenoprasum	A	O	78.2
Allium Tuberousum	A	O	99.6
Aloe vera	A	R	60.0
Aloe vera	A	O	78.4
Althaea officinalis	A	O	98.1
Amaranthus retroflexus	A	R	37.4
Amaranthus retroflexus	A	O	43.4
Anethum graveolens	A	O	33.7
Angelica archangelica	A	R	36.0
Angelica archangelica	A	O	85.2
Apium graveolens	A	R	46.7
Apium graveolens	A	O	88.8
Aralia nudicaulis	A	R	79.0
Aralia nudicaulis	A	O	98.5
Arctium minus	A	R	24.6
Arctium minus	A	O	67.9
Arctostaphylos uva-ursi	A	R	75.1
Arctostaphylos uva-ursi	A	O	89.8
Amoracia rusticana	A	O	92.3
Aronia melanocarpa	A	O	60.1
Aronia melanocarpa	A	R	61.6
Aronia melanocarpa	A	O	82.3
Artemisia Absinthium	A	R	88.6
Artemisia dracunculifolia	A	O	55.6
Aster sp	A	R	50.7
Atropa belladonna	A	O	89.4
Beckmannia eruciformis	A	R	86.0
Beckmannia eruciformis	A	O	96.2
Beta vulgaris	A	R	69.3
Beta vulgaris	A	O	87.6
Beta vulgaris spp. Maritima	A	R	53.7
Beta vulgaris spp. Maritima	A	O	84.2
Borago officinalis	A	O	38.6
Brassica napus	A	R	43.5
Brassica napus	A	O	84.4

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Brassica oleracea	A	O	60.6
Brassica rapa	A	R	62.1
Brassica rapa	A	O	98.9
Campanula rapunculus	A	O	77.0
Canna edulis	A	R	32.0
Capsella bursa-pastoris	A	R	71.4
Capsella bursa-pastoris	A	O	72.8
Capsicum annuum	A	R	39.0
Chaerophyllum bulbosum	A	O	86.6
Chelidonium majus	A	O	90.3
Chenopodium bonus-henricus	A	O	38.8
Chenopodium quinoa	A	R	42.3
Chenopodium quinoa	A	O	84.3
Cicer arietinum	A	O	91.1
Cichorium intybus	A	R	21.0
Cichorium intybus	A	O	94.8
Coix Lacryma-Jobi	A	O	35.2
Coriandrum sativum	A	R	63.6
Coriandrum sativum	A	O	84.4
Comus canadensis	A	O	58.6
Comus canadensis	A	R	99.4
Crataegus sp	A	R	22.7
Crataegus submollis	A	O	45.4
Cryptotaenia canadensis	A	R	26.3
Cryptotaenia canadensis	A	O	29.1
Cymbopogon citratus	A	O	45.2
Cyperus esculentus	A	O	75.0
Daucus carota	A	O	92.9
Dirca palustris	A	O	84.7
Dirca palustris	A	R	94.2
Dryopteris filix-mas	A	O	85.7
Echinacea purpurea	A	O	89.8
Eleusine coracana	A	R	50.6
Eleusine coracana	A	O	58.7
Fagopyrum esculentum	A	O	68.0
Fagopyrum tataricum	A	O	20.3
Fagopyrum tataricum	A	R	33.0
Foeniculum vulgare	A	O	40.3
Fragaria x ananassa	A	R	44.8
Fragaria x ananassa	A	O	92.3
Galinsoga ciliata	A	O	55.3
Galium odoratum	A	O	88.4
Gaultheria hispida	A	R	61.6
Gaultheria hispida	A	O	87.1
Glechoma hederacea	A	O	96.2
Glycine max	A	R	41.6
Glycine max	A	O	100.0

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Glycyrrhiza glabra	A	R	50.8
Glycyrrhiza glabra	A	O	90.2
Guizotia abyssinica	A	R	23.1
Guizotia abyssinica	A	O	94.8
Hamamelis virginiana	A	R	91.8
Hedeoma pulegioides	A	O	93.3
Helleborus niger	A	O	82.9
Hordeum hexastichon	A	R	26.9
Hyssopus officinalis	A	R	40.2
Hyssopus officinalis	A	O	86.0
Inula helenium	A	R	25.6
Ipomoea Batatas	A	R	26.9
Lathyrus sativus	A	O	84.9
Lathyrus sativus	A	R	22.4
Lathyrus sylvestris	A	O	93.4
Lathyrus sylvestris	A	O	64.2
Laurus nobilis	A	R	64.6
Laurus nobilis	A	O	90.0
Leonurus cardiaca	A	R	49.4
Levisticum officinale	A	O	53.3
Levisticum officinale	A	R	67.4
Lotus corniculatus	A	O	98.8
Lotus corniculatus	A	R	30.1
Lycopersicon esculentum	A	O	82.3
Malva sylvestris	A	R	44.0
Medicago sativa	A	O	94.4
Medicago sativa	A	R	80.7
Melilotus albus	A	O	98.9
Melilotus albus	A	O	89.4
Melissa officinalis	A	R	93.6
Melissa officinalis	A	O	60.1
Mentha piperita	A	R	60.8
Mentha piperita	A	O	55.4
Mentha pulegium	A	O	97.0
Mentha spicata	A	O	46.8
Mentha suaveolens	A	R	32.6
Nepeta cataria	A	O	67.2
Nepeta cataria	A	R	34.1
Nicotiana tabacum	A	R	48.5
Oenothera biennis	A	O	83.4
Oenothera biennis	A	O	63.2
Origanum majorana	A	R	62.2
Origanum vulgare	A	O	90.0
Origanum vulgare	A	O	32.3
Panax quinquefolius	A	R	75.9
Panax quinquefolius	A	R	25.6
Panicum miliaceum	A	O	45.1

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Pastinaca sativa	A	O	100.0
Petasites japonicus	A	O	82.7
Petroselinum crispum	A	R	50.2
Petroselinum crispum	A	O	85.7
Petroselinum crispum	A	O	92.2
Phalaris canariensis	A	R	89.5
Phaseolus vulgaris	A	R	22.1
Phaseolus Vulgaris	A	O	90.3
Pimpinella anisum	A	O	72.4
Plantago major	A	R	22.2
Plantago major	A	O	99.8
Plectranthus sp.	A	R	73.5
Potentilla anserina	A	O	92.9
Pteridium aquilinum	A	O	81.9
Raphanus raphanistrum	A	O	70.2
Raphanus sativus	A	R	28.4
Raphanus sativus	A	O	99.0
Rheum rhabarbarum	A	R	21.4
Rheum rhabarbarum	A	O	85.6
Ribes nigrum	A	R	59.3
Ribes nigrum	A	O	81.8
Ribes Sylvestre	A	O	98.6
Ricinus communis	A	R	78.5
Ricinus communis	A	O	90.2
Rosa rugosa	A	R	36.1
Rubus allegheniensis	A	O	59.3
Rubus canadensis	A	O	94.4
Rubus idaeus	A	R	58.4
Rubus idaeus	A	O	97.4
Rumex Acetosa	A	O	83.9
Rumex acetosella	A	R	48.7
Rumex acetosella	A	O	80.9
Rumex crispus	A	R	32.9
Rumex crispus	A	O	91.8
Rumex Scutatus	A	O	94.9
Ruta graveolens	A	O	92.5
Salix purpurea	A	O	44.8
Salix purpurea	A	R	68.1
Salvia elegans	A	O	64.2
Salvia officinalis	A	O	67.8
Salvia officinalis	A	R	85.4
Salvia sclarea	A	O	61.0
Santolina chamaecyparissus	A	R	54.1
Santolina chamaecyparissus	A	O	63.1
Satureja montana	A	O	75.6
Scorzonera hispanica	A	O	62.7
Scutellaria lateriflora	A	O	82.7

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Senecio vulgaris L.	A	R	80.9
Setaria italica	A	R	30.0
Setaria italica	A	O	66.2
Sium Sisanum	A	R	30.0
Sium Sisanum	A	O	93.3
Solanum tuberosum	A	R	30.1
Solanum tuberosum	A	O	79.8
Solidago sp	A	R	43.7
Solidago sp	A	O	72.1
Sonchus oleraceus	A	R	21.6
Sonchus oleraceus	A	O	92.4
Sorghum dochna	A	O	60.9
Sorghum durra	A	O	89.3
Stachys affinis	A	R	29.3
Stachys byzantina	A	R	28.3
Stellaria graminea	A	R	49.9
Stellaria graminea	A	O	87.6
Stellaria media	A	R	25.7
Stellaria media	A	O	26.0
Tanacetum parthenium	A	R	64.6
Tanacetum vulgare	A	R	36.0
Tanacetum vulgare	A	O	85.7
Taraxacum officinale	A	R	36.9
Taraxacum officinale	A	O	100.0
Teucrium chamaedrys	A	O	92.5
Thymus praecox subsp arcticus	A	O	50.1
Thymus serpyllum	A	R	27.3
Thymus serpyllum	A	O	88.9
Thymus vulgaris	A	R	60.9
Thymus vulgaris	A	O	74.3
Thymus x citriodorus	A	O	80.9
Tragopogon pinnatifidus	A	R	43.2
Tragopogon pinnatifidus	A	O	81.9
Tropaeolum majus	A	R	42.6
Tropaeolum majus	A	O	82.6
Typha latifolia	A	O	49.5
Typha latifolia	A	R	65.4
Vaccinium Corymbosum	A	O	94.5
Vaccinium macrocarpon	A	O	94.1
Veratrum viride	A	O	78.4
Verbascum thapsus	A	O	96.4
Viola sativa	A	O	98.7
Vicia villosa	A	R	29.0
Vicia villosa	A	O	97.6
Vinca minor	A	O	74.6
Vitis sp.	A	R	82.1
Vitis sp.	A	O	99.5



Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Zea mays	A	R	24.4
Zea mays	A	O	99.2
Achillea millefolium	G	O	42.8
Aconitum napellus	G	O	37.1
Acorus calamus	G	O	89.0
Actinidia arguta	G	R	35.5
Actinidia arguta	G	O	45.4
Adiantum pedatum	G	O	25.0
Agropyron repens	G	O	98.2
Alchemilla mollis	G	O	65.5
Alchemilla mollis	G	R	88.9
Alchemilla mollis	G	R	39.0
Allium ampeloprasum	G	O	53.8
Allium ampeloprasum	G	R	35.6
Allium cepa	G	O	75.1
Allium cepa	G	O	82.4
Allium sativum	G	O	88.7
Allium schoenoprasum	G	O	80.3
Allium tuberosum	G	R	28.8
Aloe vera	G	O	94.5
althaea officinalis	G	R	35.3
Amaranthus retroflexus	G	O	73.8
Amaranthus retroflexus	G	O	52.0
Anethum graveolens	G	R	39.0
Angelica archangelica	G	O	80.6
Angelica archangelica	G	R	37.7
Aplum graveolens	G	O	83.9
Aplum graveolens	G	O	86.7
Aralia nudicaulis	G	R	89.5
Aralia nudicaulis	G	R	27.1
Arctium minus	G	O	93.4
Arctium minus	G	R	73.3
Arctostaphylos uva-ursi	G	O	53.8
Armoracia rusticana	G	R	73.2
Aronia melanocarpa	G	O	81.2
Aronia melanocarpa	G	R	92.0
Artemisia absinthium	G	R	38.0
Artemisia dracunculifolia	G	O	72.7
Artemisia dracunculifolia	G	R	67.4
Asclepias incarnata	G	O	87.0
Asclepias incarnata	G	O	98.2
Asparagus officinalis	G	O	37.4
Aster	G	R	37.3
Aster sp.	G	O	81.3
Aster sp.	G	O	90.0
Beckmannia eruciformis	G	O	29.0
Beta vulgaris	G	R	71.5
Beta vulgaris	G	R	71.5

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Borago officinalis	G	O	36.4
Brassica napus	G	R	26.6
Brassica napus	G	O	98.8
Brassica oleracea	G	O	97.8
Brassica rapa	G	R	25.3
Brassica rapa	G	O	67.8
Calamagrostis arundiflora	G	R	23.2
Campanula rapunculus	G	O	80.2
Canna edulis	G	R	31.6
Canna edulis	G	O	44.2
Capsella bursa-pastoris	G	R	63.0
Capsella bursa-pastoris	G	O	69.5
Carum carvi	G	O	32.3
Chaerophyllum bulbosum	G	R	30.7
Chaerophyllum bulbosum	G	O	38.0
Chefalonium majus	G	O	91.3
Cicer arifolium	G	R	44.7
Cicer arifolium	G	O	92.7
Cichorium endivia subsp. Endivia	G	O	94.9
Cichorium intybus	G	R	25.8
Cichorium intybus	G	O	95.8
Cirsium arvense	G	O	73.0
Cirsium arvense	G	R	96.5
Cirsium arvense	G	O	57.4
Coix Lacryma-Jobi	G	O	62.5
Cornus canadensis	G	R	68.0
Cornus canadensis	G	O	58.3
Crataegus submollis	G	R	73.2
Crataegus submollis	G	R	65.5
Cymbopogon citratus	G	O	70.9
Cymbopogon citratus	G	O	85.0
Cyperus esculentus	G	R	23.3
Daucus carota	G	O	57.3
Daucus carota	G	R	67.1
Dirca palustris	G	O	97.2
Dirca palustris	G	O	52.2
Dryopteris filix-mas	G	O	74.4
Echinacea purpurea	G	R	38.7
Eleusine coracana	G	O	76.8
Eleusine coracana	G	R	26.8
Erigeron speciosus	G	R	59.8
Erysimum perofskianum	G	O	100.2
Erysimum perofskianum	G	R	37.6
Fagopyrum esculentum	G	O	27.3
Fagopyrum tartaricum	G	R	30.7
Fagopyrum tartaricum	G	O	30.9
Galinsoga ciliata	G	R	51.3
Galinsoga ciliata	G	R	

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Galium odoratum	G	O	86.9
Gaultheria hispidula	G	R	70.9
Gaultheria hispidula	G	O	82.2
Gaultheria procumbens	G	O	69.6
Glechoma hederacea	G	O	94.0
Glycine max	G	R	76.1
Glycine max	G	O	100.0
Glycyrrhiza glabra	G	R	33.3
Glycyrrhiza glabra	G	O	94.5
Guizotia abyssinica	G	R	41.5
Guizotia abyssinica	G	O	85.4
Hamamelis virginiana	G	O	79.7
Hamamelis virginiana	G	R	90.8
Helianthus strumosus	G	R	31.7
Helianthus strumosus	G	O	39.4
Helianthus tuberosus	G	R	31.5
Helianthus tuberosus	G	O	70.8
Helichrysum thianschanicum	G	R	40.4
Helichrysum thianschanicum	G	O	69.2
Helleborus niger	G	R	43.8
Helleborus niger	G	O	90.6
Hordeum hexastichon	G	R	22.8
Hordeum hexastichon	G	O	86.0
Hyssopus officinalis	G	R	25.8
Inula helenium	G	O	82.2
Lactuca sativa	G	R	28.5
Lactuca sativa	G	O	85.5
Lathyrus sylvestris	G	R	22.1
Lathyrus sylvestris	G	O	79.5
Laurus nobilis	G	R	49.6
Laurus nobilis	G	O	72.3
Lavandula angustifolia	G	O	57.6
Lavandula angustifolia	G	R	65.2
Ledum groenlandicum	G	R	35.1
Ledum groenlandicum	G	O	97.9
Leonurus cardiaca	G	O	99.9
Levisticum officinale	G	R	75.1
Levisticum officinale	G	O	92.5
Lotus corniculatus	G	R	25.7
Lotus corniculatus	G	O	98.5
Lupinus polyphyllus	G	O	94.5
Lupinus polyphyllus	G	R	99.9
Lycopersicon esculentum	G	R	70.0
Lycopersicon esculentum	G	O	90.2
Malus hupehensis	G	R	44.8
Malus hupehensis	G	O	82.9
Medicago sativa	G	R	26.2

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Medicago sativa	G	O	99.2
Melilotus alba	G	R	96.9
Melilotus alba	G	O	99.0
Melissa officinalis	G	O	33.2
Melissa officinalis	G	R	90.6
Mentha piperita	G	O	41.8
Mentha pulegium	G	O	38.7
Mentha spicata	G	R	32.7
Mentha spicata	G	O	80.1
Mentha suaveolens	G	O	55.7
Nepeta cataria	G	R	93.1
Ocimum basilicum	G	O	75.6
Oenothera biennis	G	R	42.9
Oenothera biennis	G	O	88.1
Origanum majorana	G	O	65.8
Origanum vulgare	G	O	89.6
Origanum vulgare	G	R	92.3
Oryza Sativa	G	O	85.6
Oxalis Deppei	G	O	88.8
Oxalis Deppei	G	R	87.8
Oxyria digyna	G	R	20.8
Oxyria digyna	G	O	89.3
Panax quinquefolius	G	R	52.7
Panicum miliaceum	G	R	31.5
Panicum miliaceum	G	O	94.4
Passiflora caerulea	G	R	21.1
Passiflora caerulea	G	O	60.6
Pastinaca sativa	G	O	72.8
Pennisetum alopecuroides	G	R	30.6
Petasites japonicus	G	O	81.6
Petroselinum crispum	G	R	62.9
Petroselinum crispum	G	O	76.3
Phalaris canariensis	G	O	22.0
Phalaris canariensis	G	R	36.7
Phaseolus vulgaris	G	R	65.5
Phaseolus vulgaris	G	O	88.2
Pimpinella anisum	G	O	46.2
Pisum sativum	G	O	52.5
Plantago major	G	R	29.0
Plantago major	G	O	96.3
Plectranthus sp.	G	R	54.5
Polygonum aviculare	G	O	29.6
Portulaca oleracea	G	R	50.9
Potentilla anserina	G	O	92.5
Poterium sanguisorba	G	O	74.2
Prunella vulgaris	G	O	77.1
Prunella vulgaris	G	R	91.8

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Pteridium aquilinum	G	O	87.5
Rhaphanus sativus	G	R	24.0
Rhaphanus sativus	G	O	85.0
Rheum rhabarbarum	G	R	22.9
Rheum rhabarbarum	G	O	85.5
Ribes nigrum	G	O	59.7
Ribes nigrum	G	O	80.4
Ribes nigrum	G	R	81.5
Ribes Sylvestre	G	O	91.7
Ricinus communis	G	R	27.0
Ricinus communis	G	O	98.3
Rosmarinus officinalis	G	O	27.5
Rubus idaeus	G	R	38.7
Rubus idaeus	G	O	51.2
Rumex crispus	G	R	37.1
Rumex crispus	G	O	95.0
Rumex scutatus	G	O	88.5
Ruta graveolens	G	R	46.4
Ruta graveolens	G	O	84.6
Salix purpurea	G	O	32.4
Salix purpurea	G	R	95.3
Salvia elegans	G	O	57.0
Salvia officinalis	G	O	65.8
Salvia officinalis	G	R	94.9
Salvia sclarea	G	O	58.5
Sambucus ebulus	G	R	32.1
Sambucus ebulus	G	O	87.7
Santolina chamaecyparissus	G	R	49.3
Saponaria officinalis	G	R	22.3
Saponaria officinalis	G	O	88.5
Satureja hortensis	G	O	73.3
Satureja montana	G	O	74.8
Scorzonera hispanica	G	R	43.1
Scorzonera hispanica	G	O	52.1
Scutellaria lateriflora	G	O	92.0
Secale cereale	G	R	23.7
Senecio vulgaris	G	R	29.1
Setaria italica	G	R	21.9
Setaria italica	G	O	83.2
Silene vulgaris	G	R	24.1
Sium sisarum	G	R	37.9
Sium sisarum	G	O	100.0
Solanum melongena	G	R	22.7
Solanum tuberosum	G	R	50.2
Solanum tuberosum	G	O	73.3
Solidago sp	G	R	32.9
Solidago sp	G	O	87.3

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Sonchus oleraceus	G	R	37.8
Sonchus oleraceus	G	O	48.1
Sorghum dochna	G	R	43.1
Sorghum dochna	G	O	91.3
sorghum durra	G	R	56.4
sorghum durra	G	O	63.2
Sorghum sudanense	G	R	56.1
Sorghum sudanense	G	O	89.7
Stachys Affinis	G	R	27.9
Stachys byzantina	G	R	42.8
Stachys byzantina	G	O	72.1
Stellaria graminea	G	R	39.7
Stellaria media	G	R	27.9
Stellaria media	G	O	50.0
Symphytum officinale	G	O	43.5
Symphytum officinale	G	R	74.2
Tanacetum cinerariifolium	G	O	72.2
Tanacetum parthenium	G	R	67.9
Tanacetum vulgare	G	R	49.5
Tanacetum vulgare	G	O	97.8
Taraxacum officinale	G	R	45.4
taraxacum officinale	G	O	100.0
Teucrium chamaedrys	G	R	61.7
Teucrium chamaedrys	G	O	89.8
Thymus fragantissimus	G	O	84.0
Thymus fragantissimus	G	R	85.4
Thymus praecox subsp arcticus	G	R	28.3
Thymus praecox subsp arcticus	G	O	39.1
Thymus serpyllum	G	R	28.4
Thymus serpyllum	G	O	90.3
Thymus vulgaris	G	R	69.0
Thymus vulgaris	G	O	70.6
Thymus x citriodorus	G	O	70.7
Tiarella cordifolia	G	O	88.4
Tropaeolum majus	G	O	78.8
Typha latifolia	G	O	76.4
Typha latifolia	G	R	82.9
Vaccinium corymbosum	G	R	72.1
Vaccinium corymbosum	G	O	95.4
Vaccinium macrocarpon	G	O	95.3
Veratrum viride	G	O	80.8
Verbascum thapsus	G	R	27.3
Verbascum thapsus	G	O	91.3
Viburnum trilobum	G	O	68.5
Viburnum trilobum	G	R	72.6
Vicia sativa	G	R	32.2
Vicia sativa	G	O	96.8

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Vicia villosa	G	R	29.7
Vicia villosa	G	O	98.7
Vinca minor	G	O	35.8
Vitis sp.	G	R	77.5
Vitis sp.	G	O	99.8
Zea mays	G	O	54.2
Zea mays	G	R	56.0
Achillea millefolium	T	O	89.0
Aconitum napellus	T	O	63.6
Acorus calamus	T	O	94.2
Actinidia arguta	T	R	52.4
Actinidia arguta	T	O	84.8
Adiantum pedatum	T	O	92.2
Agrimonia eupatoria	T	O	39.2
Agropyron repens	T	O	97.3
Alchemilla mollis	T	O	85.2
Alchemilla mollis	T	R	96.8
Allium ampeloprasum	T	R	33.5
Allium ampeloprasum	T	O	94.1
Allium cepa	T	R	54.4
Allium cepa	T	O	100.0
Allium sativum	T	O	78.5
Allium schoenoprasum	T	O	87.0
Allium tuberosum	T	R	53.6
Allium tuberosum	T	O	98.7
Aloe vera	T	R	43.7
Aloe vera	T	O	79.9
Althaea officinalis	T	O	85.8
Amaranthus caudatus	T	R	20.7
Amaranthus caudatus	T	O	69.3
Amaranthus retroflexus	T	R	32.4
angelica archangelica	T	R	44.2
angelica archangelica	T	O	55.7
Anthriscus cerefolium	T	O	96.1
Apium graveolens	T	R	30.3
Aralia nudicaulis	T	R	68.2
Aralia nudicaulis	T	O	97.8
Arctium minus	T	O	92.9
Arctostaphylos uva-ursi	T	O	72.0
Arctostaphylos uva-ursi	T	R	79.8
Arnica montana	T	O	88.0
Aronia melanocarpa	T	R	74.9
Aronia melanocarpa	T	O	80.0
Artemisia absinthium	T	O	41.7
Artemisia absinthium	T	R	96.1
Artemisia dracunculus	T	O	96.2
Artium lappa	T	O	21.1

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Asclepias incarnata	T	O	81.5
Asclepias incarnata	T	R	88.7
Aster	T	O	34.1
Aster sp	T	R	48.8
Aster sp	T	O	49.7
Atropa belladonna	T	O	71.7
Avena sativa	T	R	40.4
Beta vulgaris	T	O	30.6
Beta vulgaris	T	R	41.7
Borago officinalis	T	R	59.2
Borago officinalis	T	O	76.5
Brassica napus	T	R	35.8
Brassica Napus	T	O	91.9
Brassica nigra	T	R	24.3
Brassica oleracea	T	O	83.8
Bromus inermis	T	O	69.8
Bromus inermis	T	R	91.2
Calendula officinalis	T	R	34.5
Canna edulis	T	R	20.5
Canna edulis	T	O	73.5
Capsella bursa-pastoris	T	R	32.1
Capsella bursa-pastoris	T	O	75.1
Carex morrowii	T	R	44.0
Carex morrowii	T	O	94.3
Carum carvi	T	R	20.5
Cerastium tomentosum	T	R	38.8
Chaerophyllum bulbosum	T	R	23.0
Chaerophyllum bulbosum	T	O	80.2
Chelidonium majus	T	O	94.3
Chenopodium quinoa	T	O	48.2
Chenopodium quinoa	T	R	49.3
Cicer arietinum	T	R	25.6
Cicer arietinum	T	O	81.7
Cichorium endivia subsp endivia	T	R	20.8
Cichorium endivia subsp endivia	T	O	95.5
Cichorium intybus	T	R	20.4
Cichorium intybus	T	O	98.0
Cirsium arvense	T	R	58.3
Cirsium arvense	T	O	79.6
Citrus colocynthis	T	R	41.2
Citrus colocynthis	T	O	84.9
Coriandrum sativum	T	O	38.4
Coriandrum sativum	T	R	48.8
Cornus canadensis	T	O	32.1
Cornus canadensis	T	R	80.2
Crataegus sp	T	R	22.9
Crataegus subpollis	T	O	81.5



Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Cryptotaenia canadensis	T	R	20.9
Cymbopogon citratus	T	R	40.5
Cymbopogon citratus	T	O	77.0
Cyperus esculentus	T	R	20.9
Cyperus esculentus	T	O	72.0
Dirca palustris	T	R	67.1
Dirca palustris	T	O	82.2
Dryopteris filix-mas	T	O	23.9
Echinacea purpurea	T	O	92.2
Eleusine coracana	T	R	30.0
Erysimum perofskianum	T	R	81.7
Erysimum perofskianum	T	O	98.8
Erysimum perofskianum	T	O	35.5
Fagopyrum esculentum	T	O	40.0
Fagopyrum tararicum	T	R	30.1
Fagopyrum tararicum	T	O	21.0
Foeniculum vulgare	T	O	98.6
Fpomoëa batatas	T	O	44.3
Fragaria x ananassa	T	R	49.4
Galinsoga ciliata	T	O	56.9
Galinsoga ciliata	T	R	59.4
Galium odoratum	T	O	95.3
Galium odoratum	T	R	37.9
Gautheria hispidula	T	O	78.5
Gautheria hispidula	T	O	85.7
Gaultheria procumbens	T	O	95.9
Glechoma hederacea	T	O	96.8
Glycine max	T	R	32.8
Glycine max	T	O	100.0
Glycine max	T	R	70.2
Glycyrrhiza glabra	T	O	90.3
Glycyrrhiza glabra	T	R	34.4
Guizotia abyssinica	T	O	97.9
Guizotia abyssinica	T	R	72.1
Hamamelis virginiana	T	O	77.1
Hamamelis virginiana	T	O	34.7
Hedeoma pulegioides	T	R	20.6
Helianthus strumosus	T	O	57.2
Helianthus strumosus	T	O	61.0
Helianthus tuberosa	T	R	46.9
Helianthus tuberosus	T	O	23.5
Helichrysum angustifolium	T	R	94.5
Helichrysum angustifolium	T	R	98.1
Helichrysum thianschanicum	T	O	26.2
Helleborus niger	T	R	38.0
Humulus lupulus	T	O	93.8
Humulus lupulus	T	O	41.5
Hyoscyamus niger			

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Hyssopus officinalis	T	R	44.6
Inula helenium	T	O	97.6
Juniperus communis	T	R	80.0
Koeleria glauca	T	O	94.7
Koeleria glauca	T	R	99.4
Lactuca sativa	T	O	94.0
Lathyrus Sativus	T	R	24.0
Lathyrus Sativus	T	O	33.0
Lathyrus sylvestris	T	O	43.1
Laurus nobilis	T	R	51.7
Laurus nobilis	T	O	87.2
Lavandula latifolia	T	R	75.5
Lavandula angustifolia	T	R	81.9
Ledum groenlandicum	T	R	45.9
Ledum groenlandicum	T	O	99.5
Lens culinaris subsp. Culinaris	T	R	28.0
Lens culinaris subsp. Culinaris	T	O	97.6
Levisticum officinale	T	R	51.4
Levisticum officinale	T	O	87.8
Lotus corniculatus	T	R	53.7
Lotus corniculatus	T	O	97.4
Lupinus polyphyllus	T	O	85.8
Lupinus polyphyllus	T	R	99.3
Luzula sylvatica	T	R	29.5
Malus hupehensis	T	R	58.7
Malus hupehensis	T	O	62.5
Malus spp.	T	O	25.7
Malva sylvestris	T	O	73.5
Medicago sativa	T	R	46.2
Medicago sativa	T	O	94.9
Melilotus officinalis	T	O	99.4
Melissa officinalis	T	R	91.0
Mentha piperita	T	O	88.8
Menyanthes trifoliata	T	O	64.3
Miscanthus sinensis Andress	T	R	36.1
Miscanthus sinensis Andress	T	O	68.6
Napeta cataria	T	O	23.6
Ocimum Basilicum	T	O	81.3
Oenothera biennis	T	R	35.7
Oenothera biennis	T	O	75.6
Onobrychis vicifolia	T	R	44.5
Onobrychis vicifolia	T	O	80.7
Origanum vulgare	T	R	76.5
Origanum vulgare	T	O	82.9
Oryza sativa	T	O	51.4
Oxalis Deppel	T	R	48.4
Oxalis Deppel	T	O	73.4

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
oxyria digyna	T	R	23.6
oxyria digyna	T	O	92.5
Panax quinquefolius	T	O	24.8
Panax quinquefolius	T	R	36.6
Panicum miliaceum	T	R	26.9
Passiflora caerulea	T	R	55.3
Passiflora caerulea	T	O	77.6
Pastinaca sativa	T	O	49.2
Pastinaca sativa	T	O	82.9
Pennisetum alopecuroides	T	O	74.9
Perilla frutescens	T	R	83.5
Petasites Japonicus	T	R	22.9
Petasites Japonicus	T	O	79.5
Petroselinum crispum	T	O	61.1
Petroselinum crispum	T	O	83.7
Petroselinum crispum	T	R	99.0
Phalaris canariensis	T	R	29.5
Phalaris canariensis	T	O	67.2
Phaseolus vulgaris	T	O	93.1
Physalis pruinosa	T	O	64.2
Pimpinella anisum	T	R	59.0
Pimpinella anisum	T	O	88.5
Pisum sativum	T	O	75.4
Plantago major	T	O	99.6
Plectranthus sp.	T	R	49.4
Podophyllum peltatum	T	O	87.3
Polygonum aviculare	T	R	32.8
Polygonum aviculare	T	O	53.9
Potentilla anserina	T	O	94.9
Prunella vulgaris	T	O	76.4
Prunella vulgaris	T	R	94.7
Pteridium aquilinum	T	O	90.1
Raphanus raphanistrum	T	R	39.5
Raphanus raphanistrum	T	O	91.0
Raphanus sativus	T	O	79.1
Ribes nigrum	T	R	89.6
Ribes nigrum	T	O	85.4
Ribes Sylvestre	T	R	20.1
Ribes Sylvestre	T	O	97.4
Ricinus communis	T	R	26.5
Ricinus communis	T	O	92.4
Rosa rugosa	T	O	41.6
Rubus canadensis	T	O	96.4
Rubus idaeus	T	R	44.8
Rubus idaeus	T	O	88.7
Rumex scutatus	T	O	88.7
Rumex acetosella	T	R	40.9

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
Rumex acetosella	T	O	90.9
Rumex crispus	T	R	33.4
Rumex crispus	T	O	89.3
Ruta graveolens	T	O	68.5
Salix purpurea	T	R	37.1
Salix purpurea	T	O	48.1
Salvia officinalis	T	O	67.7
Salvia officinalis	T	R	91.1
Sambucus canadensis	T	R	35.7
Sambucus canadensis	T	O	99.0
Sanguisorba minor	T	O	90.6
Santolina	T	O	62.7
Santolina	T	R	73.4
Saponaria officinalis	T	O	93.2
Satureja hortensis	T	R	43.1
Satureja hortensis	T	O	87.9
Satureja montana	T	R	55.1
Satureja montana	T	O	79.2
Satureja repandra	T	R	49.7
Satureja repandra	T	O	73.3
Scorzonera hispanica	T	O	63.3
Scutellaria lateriflora	T	O	29.3
Setaria italica	T	R	20.8
Silene vulgaris	T	O	96.8
Slum sisarum	T	R	27.4
Slum sisarum	T	O	88.8
Solanum melongens	T	R	21.9
Solidago sp	T	R	45.9
Solidago sp	T	O	74.0
Sonchus oleraceus	T	R	22.7
Sonchus oleraceus	T	O	38.1
Sorghum caffrorum	T	O	57.0
Sorghum caffrorum	T	R	74.0
Sorghum dochna	T	O	44.3
Sorghum dochna	T	O	65.8
Sorghum dochna	T	R	70.7
Sorghum dochna	T	R	89.0
Sorghum durra	T	R	39.6
Sorghum durra	T	O	76.5
Sorghum sudanense	T	O	40.5
Stachys affinis	T	R	67.2
Stachys affinis	T	O	88.8
Stachys byzantina	T	R	85.7
Stellaria graminea	T	O	43.3
Stellaria graminea linné	T	R	39.2
Stellaria media	T	R	21.1
Stipa capillata	T	R	24.2

Table 9  
Cath K

Nom latin	Stress	Extrait	Inhibition
<i>Symphytum officinale</i>	T	R	64.4
<i>Tanacetum parthenium</i>	T	R	62.2
<i>Tanacetum vulgare</i>	T	R	42.5
<i>Tanacetum vulgare</i>	T	O	97.5
<i>Taraxacum officinale</i>	T	R	47.5
<i>Taraxacum officinale</i>	T	O	100.0
<i>Teucrium chamaedrys</i>	T	R	40.0
<i>Thymus fragantissimus</i>	T	O	93.7
<i>Thymus fragantissimus</i>	T	R	97.3
<i>Thymus praecox subsp arcticus</i>	T	O	46.0
<i>Thymus pseudolanuginosus</i>	T	R	74.3
<i>Thymus serpyllum</i>	T	O	88.6
<i>Thymus X citriodorus</i>	T	R	68.4
<i>Thymus X citriodorus</i>	T	O	97.8
<i>Tiarella cordifolia</i>	T	O	94.9
<i>Tragopogon porrifolius</i>	T	R	45.0
<i>Tragopogon porrifolius</i>	T	O	72.0
<i>Triticosecale spp</i>	T	R	27.8
<i>Triticosecale spp</i>	T	O	87.8
<i>Triticum aestivum</i>	T	R	26.6
<i>Triticum aestivum</i>	T	O	42.6
<i>Tropaeolum majus</i>	T	R	21.4
<i>Tropaeolum majus</i>	T	O	81.5
<i>Tropaeolum majus</i>	T	R	44.8
<i>Typha latifolia</i>	T	O	72.5
<i>Typha latifolia</i>	T	R	35.2
<i>Urtica dioica</i>	T	O	62.9
<i>Urtica dioica</i>	T	R	27.4
<i>Vaccinium angustifolium</i>	T	R	78.0
<i>Vaccinium macrocarpon</i>	T	O	87.8
<i>Vaccinium macrocarpon</i>	T	R	90.2
<i>Veratrum viride</i>	T	O	84.3
<i>Verbascum thapsus</i>	T	R	45.2
<i>Viburnum trilobum</i>	T	O	70.0
<i>Viburnum trilobum</i>	T	R	99.0
<i>Vicia sativa</i>	T	O	44.2
<i>Vicia villosa</i>	T	R	98.3
<i>Vicia villosa</i>	T	O	21.5
<i>Vinca minor</i>	T	R	99.9
<i>Vitis sp.</i>	T	O	31.7
<i>Zea mays</i>	T	R	90.2
<i>Zea mays</i>	T	O	

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	21.9
Achillea millefolium	A	S	24.5
Aconitum napellus	A	O	25.8
Adiantum pedatum	A	R	27.6
Agrimonia eupatoria	A	V	26.0
Agropyron cristatum	A	R	21.0
Agropyron repens	A	S	23.4
Agropyron repens	A	R	28.2
Agropyron repens	A	S	39.8
Agropyron repens	A	O	38.9
Agrostis Stolonifera	A	V	27.9
Alchemilla mollis	A	O	68.0
Alchemilla mollis	A	R	100.0
Alchemilla mollis	A	S	23.5
Alchemilla mollis	A	S	28.2
Alkanna tinctoria	A	S	57.9
Allium Tuberostum	A	O	20.5
Aloe vera	A	O	29.1
Ambrosia artemisiifolia	A	O	96.5
Amelanchier sanguinea	A	V	52.4
Amelanchier sanguinea	A	O	32.1
Anethum graveolens	A	W	22.8
Anethum graveolens	A	S	39.2
Angelica archangelica	A	O	37.6
Anthemis nobilis	A	S	28.4
Anthemis nobilis	A	O	31.9
Anthemis tinctoria	A	S	38.4
Anthemis tinctoria	A	S	49.2
Apium graveolens	A	O	46.4
Arctium minus	A	R	100.0
Arctostaphylos uva-ursi	A	O	21.9
Aronia melanocarpa	A	W	78.4
Aronia melanocarpa	A	V	100.0
Aronia melanocarpa	A	R	29.0
Aronia melanocarpa	A	O	33.6
Aronia melanocarpa	A	W	89.2
Artemisia dracunculus	A	R	26.2
Aster sp	A	R	100.0
Beta vulgaris	A	R	92.2
Beta vulgaris spp. Maritima	A	S	22.6
Borago officinalis	A	S	68.3
Brassica napus	A	R	29.5
Brassica napus	A	S	32.6
Brassica nigra	A	O	22.9
Brassica oleracea	A	V	20.8
Brassica oleracea	A	R	22.2
Brassica oleracea	A	S	23.2

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Brassica rapa	A	R	26.9
Bromus inermis	A	O	34.1
Bromus inermis	A	R	21.9
Calamintha nepeta	A	O	35.4
Canna edulis	A	O	56.4
Canna edulis	A	R	21.4
Carum carvi	A	O	24.2
Chaerophyllum bulbosum	A	O	25.5
Chenopodium bonus-henricus	A	R	24.0
Chenopodium bonus-henricus	A	S	85.8
Chenopodium quinoa	A	S	50.4
Chrysanthemum coronarium	A	O	26.0
Cicer arietinum	A	S	23.3
Cichorium intybus	A	S	32.1
Citrullus lanatus	A	R	26.3
Coix Lacryma-Jobi	A	S	66.1
Cosmos sulphureus	A	O	38.8
Cosmos sulphureus	A	S	20.7
Crataegus sp	A	O	84.1
Crataegus sp	A	R	23.8
Crataegus sp	A	S	21.7
Crataegus submollis	A	S	34.0
Cryptotaenia canadensis	A	V	22.1
Cucumis anguria	A	O	28.2
Cucumis Anguria	A	R	53.4
Cucumis melo	A	S	53.6
Cucumis sativus	A	R	53.3
Curcuma zedoaria	A	O	24.3
Cymbopogon citratus	A	S	91.2
Datisca cannabina	A	S	55.7
Daucus carota	A	R	100.0
Daucus carota	A	V	24.7
Daucus carota	A	O	37.9
Digitalis purpurea	A	S	34.0
Dirca palustris	A	R	20.3
Dirca palustris	A	S	27.9
Dolichos Lablab	A	R	21.5
Dryopteris filix-mas	A	R	58.8
Dryopteris filix-mas	A	S	22.0
Echinacea purpurea	A	O	38.2
Echinacea purpurea	A	S	28.1
Eleusine coracana	A	S	20.7
Erigeron canadensis	A	O	29.6
Fagopyrum esculentum	A	S	29.3
Fagopyrum tataricum	A	S	24.4
Foeniculum vulgare	A	O	25.1
Fragaria Xananassa	A	O	22.3

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Fragaria Xananassa	A	W	100.0
Fragaria Xananassa	A	V	21.4
Fragaria Xananassa	A	S	29.4
Fragaria Xananassa	A	V	21.6
Fragaria Xananassa	A	R	61.6
Galinsoga ciliata	A	R	21.0
Galium odoratum	A	O	33.7
Gaultheria hispidula	A	R	52.1
Gentiana lutea	A	O	21.8
Glechoma hederacea	A	S	81.3
Glycine Max	A	W	100.0
Glycyrrhiza glabra	A	S	63.3
Glycyrrhiza glabra	A	R	38.9
Gutierrezia abyssinica	A	R	100.0
Hamamelis virginiana	A	S	32.1
Helianthus Tuberosus	A	R	22.8
Heliotropium arborescens	A	S	24.9
Heliotropium arborescens	A	S	25.6
Helleborus niger	A	O	58.1
Hordeum vulgare	A	S	24.8
Hypericum perforatum	A	O	21.1
Hyssopus officinalis	A	S	93.6
Hyssopus officinalis	A	S	34.3
Lactuca serriola	A	W	100.0
Laurus nobilis	A	W	57.1
Lavandula latifolia	A	O	43.7
Lavandula latifolia	A	S	42.2
Lavandula latifolia	A	R	100.0
Leonurus cardiaca	A	O	100.0
Lepidium sativum	A	O	31.0
Lolium multiflorum	A	O	20.8
Lolium perenne	A	R	21.7
Lolium perenne	A	S	22.1
Lolium perenne	A	O	33.4
Ludoviciana	A	S	20.7
Ludoviciana	A	S	22.9
Malva sylvestris	A	O	28.5
Matricaria recutita	A	O	21.9
Metaleuca alternifolia	A	S	23.4
Melissa officinalis	A	O	31.6
Mentha piperita	A	W	33.2
Mentha piperita	A	O	42.2
Mentha pulegium	A	V	21.5
Mentha pulegium	A	S	33.8
Mentha pulegium	A	O	24.3
Mentha spicata	A	O	25.2
Oenothera biennis	A	R	78.8



Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Origanum majorana	A	V	37.4
Oxyria digyna	A	V	28.2
Panicum miliaceum	A	O	33.3
Peucedanum cervaria	A	R	23.4
Phalaris arundinacea	A	R	22.4
Phalaris canariensis	A	O	27.8
Phaseolus coccineus	A	S	28.3
Phaseolus mungo	A	R	37.8
Phaseolus vulgaris	A	O	24.3
Phaseolus Vulgaris	A	S	74.3
Phleum pratense	A	R	27.8
Physalis ixocarpa	A	O	21.5
Physalis ixocarpa	A	S	26.5
Physalis Pruinosa	A	S	60.2
Phytolacca americana	A	S	100.0
Plantago coronopus	A	O	21.1
Plantago coronopus	A	S	25.7
Plantago major	A	O	26.0
Plectranthus sp.	A	O	23.1
Poa pratensis	A	O	21.7
Polygonum aviculare	A	R	79.7
Portulaca oleraceae	A	O	34.5
Poterium sanguisorba	A	R	25.8
Poterium sanguisorba	A	O	34.6
Poterium sanguisorba	A	W	31.0
Pteridium aquilinum	A	R	54.4
Raphanus sativus	A	S	66.4
Raphanus sativus	A	R	81.8
Rheum officinale	A	S	37.9
Ribes nigrum	A	W	100.0
Ribes nigrum	A	S	47.6
Ribes nigrum	A	V	27.5
Ribes rubrum	A	R	35.4
Ribes Sylvestre	A	W	100.0
Rosa rugosa	A	W	95.1
Rosa rugosa	A	R	24.6
Rosmarinus officinalis	A	R	58.4
Rubus idaeus	A	W	27.6
Rubus idaeus	A	S	33.0
Rubus idaeus	A	R	27.9
Rubus idaeus	A	O	37.4
Rumex Acetosa	A	S	45.2
Rumex crispus	A	O	26.1
Rumex crispus	A	R	100.0
Rumex Scutatus	A	V	43.8
Ruta graveolens	A	O	28.7
Saccharum officinarum	A	O	29.6

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Saccharum officinarum	A	R	23.8
Salvia elegans	A	O	100.0
Salvia officinalis	A	O	95.7
Salvia officinalis	A	W	77.9
Salvia officinalis	A	R	83.7
Salvia officinalis	A	S	20.5
Salvia sclarea	A	O	100.0
Salvia sclarea	A	V	28.6
Santolina chamaecyparissus	A	O	27.1
Satureja montana	A	W	23.2
Satureja montana	A	S	27.7
Scorzonera hispanica	A	R	60.1
Scutellaria lateriflora	A	S	45.9
Senecio vulgaris	A	R	34.0
Sonchus oleraceus	A	O	29.1
Sorghum dochna	A	O	21.1
Sorghum dochna	A	V	24.4
Sorghum durra	A	O	23.4
Sorghum durra	A	V	23.6
Spinnacia oleracea	A	S	26.8
Stellaria graminea	A	O	24.8
Symphytum officinale	A	O	91.6
Tanacetum cinerariifolium	A	R	28.3
Tanacetum vulgare	A	O	46.3
Tanacetum vulgare	A	S	33.7
Taraxacum officinale	A	W	26.4
Taraxacum officinale	A	V	24.0
Taraxacum officinale	A	O	21.0
Teucrium chamaedrys	A	O	37.0
Thymus fragrantissimus	A	W	20.2
Thymus herba-barona	A	W	20.8
Thymus vulgaris	A	R	77.9
Thymus vulgaris	A	W	23.6
Thymus x citriodorus	A	W	21.3
Thymus x citriodorus	A	S	21.1
Trichosanthes kirilowii	A	O	23.2
Trigonella foenum graecum	A	S	32.0
Triticum durum	A	S	22.0
Triticum turgidum	A	O	80.0
Triticum spelta	A	S	47.6
Urtica dioica	A	O	33.3
Vaccinium angustifolium	A	W	42.6
Vaccinium Corymbosum	A	W	22.4
Vaccinium Corymbosum	A	S	21.6
Vaccinium macrocarpon	A	W	22.5
Vaccinium macrocarpon	A	S	54.8
Valerianella locusta	A	O	49.2

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Veronica officinalis	A	O	43.7
Viburnum trilobum Marsh.	A	W	75.4
Vitis	A	S	33.8
Vitis	A	W	100.0
Vitis	A	O	21.0
Zea Mays	A	S	95.2
Achillea millefolium	G	O	28.8
Achillea millefolium	G	S	27.3
Aconitum napellus	G	O	23.1
Aconitum napellus	G	R	97.7
Acorus calamus	G	S	20.0
Adiantum pedatum	G	R	100.0
Agastache foeniculum	G	W	25.3
Ageratum conyzoides	G	O	28.5
Agropyron cristatum	G	R	37.3
Agropyron repens	G	R	31.4
Alchemilla mollis	G	W	20.6
Alchemilla mollis	G	O	56.1
Alchemilla mollis	G	R	28.1
Alchemilla mollis	G	S	25.3
Allium cepa	G	O	20.2
Allium sativum	G	O	100.0
Allium tuberosum	G	O	100.0
Althaea officinalis	G	S	30.8
Amaranthus caudatus	G	S	22.3
Amelanchier sanguinea	G	W	88.3
Anethum graveolens	G	O	26.2
Angelica archangelica	G	S	43.2
Anthemis nobilis	G	S	21.7
Arctostaphylos uva-ursi	G	O	33.1
Arctostaphylos uva-ursi	G	R	100.0
Arctostaphylos uva-ursi	G	S	23.4
Armoracia rusticana	G	O	22.5
Aronia melanocarpa	G	W	79.0
Aronia melanocarpa	G	V	100.0
Aronia melanocarpa	G	S	22.7
Aronia melanocarpa	G	O	29.6
Artemisia absinthium	G	O	31.5
Artemisia absinthium	G	V	24.2
Aster	G	S	29.2
Beckmannia eruciformis	G	O	22.7
Beta vulgaris	G	R	100.0
Betula glandulosa	G	S	26.7
Borago officinalis	G	O	25.7
Brassica Napus	G	S	50.4
Brassica napus	G	R	48.2
Brassica nigra	G	S	23.9

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Brassica oleracea	G	R	28.1
Brassica oleracea	G	S	22.5
Brassica rapa	G	R	56.4
Calamintha nepeta	G	V	24.8
Calamintha nepeta	G	O	38.8
Canna edulis	G	O	66.3
Capsella bursa-pastoris	G	R	25.8
Carthamus tinctorius	G	R	22.2
Chelidonium majus	G	O	31.8
Chenopodium album	G	S	21.3
Cichorium endivia subsp. Endivia	G	S	21.4
Cicer arietinum	G	S	50.7
Cichorium endivia subsp. Endivia	G	O	48.5
Cichorium endivia subsp. Endivia	G	S	27.9
Coffea Lacryma-Jobi	G	O	24.5
Cornus canadensis	G	S	38.1
Crataegus sp	G	W	57.8
Cucurbita Pepo	G	R	23.1
Curcuma zedoaria	G	O	24.0
Datura metel	G	O	21.0
Daucus carota	G	O	32.3
Daucus carota	G	R	80.9
Dipsacus sativus	G	O	32.7
Dirca palustris	G	S	33.5
Dolichos Lablab	G	R	32.1
Dryopteris filix-mas	G	R	80.9
Echinacea purpurea	G	S	63.0
Elymus junceus	G	R	25.9
Erigeron canadensis	G	O	43.0
Erigeron speciosus	G	O	22.8
Erigeron speciosus	G	S	24.2
Erysimum perofskianum	G	O	20.8
Fagopyrum esculentum	G	S	32.9
Fagopyrum tataricum	G	S	41.2
Foeniculum vulgare	G	V	25.7
Foeniculum vulgare	G	S	42.6
Foeniculum Vulgare	G	O	24.1
Galinsoga ciliata	G	S	25.0
Galium odoratum	G	R	89.4
Gaultheria hispida	G	O	35.1
Gaultheria hispida	G	R	67.2
Gaultheria procumbens	G	S	74.7
Glycine max	G	R	24.6
Glycyrrhiza glabra	G	W	56.8
Glycyrrhiza glabra	G	V	30.0
Glycyrrhiza glabra	G	R	92.4
Glycyrrhiza glabra	G	S	28.6

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Hamamelis virginiana	G	R	100.0
Hamamelis virginiana	G	S	29.3
Hedeoma pulegioides	G	O	60.0
Helenium hoopesii	G	O	37.3
Helenium hoopesii	G	S	34.7
Helianthus tuberosus	G	V	21.4
Helichrysum thianschanicum	G	O	43.0
Helichrysum thianschanicum	G	R	39.2
Heliotropium arborescens	G	R	22.8
Heliotropium arborescens	G	S	39.5
Helleborus niger	G	S	34.2
Hordeum vulgare subsp. Vulgare	G	O	33.4
Hypericum henryi	G	S	23.7
Hypericum perforatum	G	S	23.8
Hyssopus officinalis	G	W	45.1
Hyssopus officinalis	G	S	24.2
Inula helenium	G	W	96.2
Ipomoea batatas	G	V	21.9
Lactuca sativa	G	W	35.1
Laportea canadensis	G	O	25.1
Laportea canadensis	G	S	26.5
Laserpitium latifolium	G	S	22.1
Lathyrus sativus	G	O	29.9
Lathyrus sativus	G	W	27.8
Lathyrus sativus	G	S	28.1
Lathyrus sativus	G	W	100.0
Laurus nobilis	G	O	65.7
Lavandula angustifolia	G	O	100.0
Ledum groenlandicum	G	R	61.3
Leonurus cardiaca	G	O	100.0
Lepidium sativum	G	W	91.4
Levisticum officinale	G	O	37.3
Lolium perenne	G	S	21.8
Lotus tetragonolobus	G	O	42.3
Lupinus polyphyllus	G	S	25.9
Malus hupehensis	G	S	32.1
Medicago sativa	G	O	40.0
Melaleuca alternifolia	G	S	23.1
Melissa officinalis	G	S	65.5
Mentha arvensis	G	O	24.2
Mentha piperita	G	S	23.7
Mentha piperita	G	V	34.2
Mentha piperita	G	O	63.3
Mentha pulegium	G	V	30.2
Mentha pulegium	G	S	45.9
Mentha spicata	G	S	47.7
Monarda didyma	G	R	100.0
Nepeta cataria			

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Nicotiana tabacum	G	O	75.8
Ocimum basilicum	G	O	40.1
Ocimum basilicum	G	S	27.9
Oenothera biennis	G	O	26.3
Oenothera biennis	G	R	100.0
Oenothera biennis	G	O	49.6
Oenothera biennis	G	S	54.0
Oenothera biennis	G	W	100.0
Origanum vulgare	G	O	26.7
Origanum vulgare	G	S	21.3
Origanum vulgare	G	S	34.5
Oryza Sativa	G	O	27.4
Oxalis Deppei Lodd.	G	O	25.3
Panicum miffaceum	G	R	95.0
Pastinaca sativa	G	R	44.5
Petroselinum crispum	G	S	26.5
Petroselinum crispum	G	R	26.1
Peucedanum cervaria	G	R	30.9
Phaseolus coccineus	G	O	27.5
Phaseolus coccineus	G	R	24.3
Phaseolus mungo	G	S	37.9
Phlox paniculata	G	S	26.5
Physalis pruinosa	G	S	100.0
Phytolacca americana	G	S	23.7
Pimpinella anisum	G	O	25.1
Plantago coronopus	G	O	25.0
Plantago major	G	R	20.5
Plantago major	G	S	23.6
Plantago major	G	O	28.5
Poa compressa	G	O	37.5
Poa pratensis	G	R	25.4
Polygonum aviculare	G	O	21.3
Polygonum pensylvanicum	G	O	28.0
Portulaca oleracea	G	O	25.6
Poterium sanguisorba	G	V	21.9
Poterium sanguisorba	G	O	23.4
Prunella vulgaris	G	R	43.1
Pteridium aquilinum	G	O	46.5
Reseda odorata	G	S	32.6
Rhaphanus sativus	G	S	20.9
Rheum X cultorum	G	W	29.8
Ribes nidigrolaria	G	V	53.7
Ribes nidigrolaria	G	V	20.3
Ribes nigrum	G	W	91.6
Ribes Silvestre	G	S	46.0
Ricinus communis	G	R	60.4
Rosmarinus officinalis	G	W	28.2
Rubus Idaeus	G		

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Rubus occidentalis	G	R	93.6
Rubus occidentalis	G	O	40.0
Rubus occidentalis	G	V	24.3
Rumex acetosella	G	R	100.0
Rumex crispus	G	O	32.0
Rumex patientia	G	V	28.8
Rumex scutatus	G	S	23.4
Ruta graveolens	G	O	30.2
Saccharum officinarum	G	S	24.8
Salix purpurea	G	O	100.0
Salvia elegans	G	W	52.4
Salvia officinalis	G	R	100.0
Salvia officinalis	G	O	100.0
Salvia officinalis	G	O	100.0
Salvia sclarea	G	V	23.0
Salvia sclarea	G	W	31.1
Salvia sclarea	G	O	52.1
Sambucus ebulus	G	R	48.6
Sambucus ebulus	G	R	100.0
Sanguisorba officinalis	G	O	100.0
Santolina chamaecyparissus	G	S	56.8
Serratula tinctoria	G	O	34.1
Satureja montana	G	R	37.9
Scolymus hispanicus	G	S	54.7
Scutellaria lateriflora	G	R	35.3
Senecio vulgaris	G	S	22.6
Solidago sp	G	O	23.7
Sonchus oleraceus	G	V	27.1
Sorghum caffrorum	G	S	40.7
Sorghum dochna	G	O	21.4
Sorghum dochna	G	V	23.3
Sorghum sudanense	G	W	92.9
Sorghum sudanense	G	O	25.4
Stellaria graminea	G	O	30.4
Stellaria media	G	R	22.0
Stellaria media	G	O	57.3
Tanacetum vulgare	G	S	38.4
Tanacetum vulgare	G	O	38.2
Tanacetum vulgare	G	W	26.3
Tanacetum vulgare	G	V	20.0
Taraxacum officinale	G	O	28.0
Taraxacum officinale	G	R	79.9
Thymus fragrantissimus	G	O	28.2
Thymus fragrantissimus	G	W	20.2
Thymus herba-barona	G	V	22.2
Thymus serpyllum	G	S	29.7
Triticosecale spp.	G	S	37.8
Triticum durum	G	S	37.8

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
<i>Triticum spelta</i>	G	O	31.0
<i>Triticum spelta</i>	G	S	37.8
<i>Typha latifolia</i>	G	S	27.5
<i>Urtica dioica</i>	G	O	60.3
<i>Vaccinium corymbosum</i>	G	S	33.2
<i>Vaccinium angustifolium</i>	G	S	43.7
<i>Vaccinium macrocarpon</i>	G	W	57.8
<i>Vaccinium macrocarpon</i>	G	S	59.9
<i>Valerianaella locusta</i>	G	O	32.1
<i>Veratrum viride</i>	G	O	22.1
<i>Verbascum thapsus</i>	G	S	33.8
<i>Viburnum trilobum</i>	G	V	21.3
<i>Viburnum trilobum</i>	G	W	73.0
<i>Vicia faba</i>	G	S	21.2
<i>Vigna unguiculata</i>	G	R	20.1
<i>Vitis</i>	G	V	28.0
<i>Vitis</i>	G	W	68.1
<i>Vitis</i>	G	O	41.7
<i>Vitis</i>	G	S	30.7
<i>Xanthium sibiricum</i>	G	O	22.1
<i>Zea mays</i>	G	S	20.3
<i>Abies lasiocarpa</i>	T	S	22.4
<i>Achillea millefolium</i>	T	S	21.1
<i>Aconitum napellus</i>	T	O	100.0
<i>Acorus calamus</i>	T	S	21.0
<i>Agaricus bisporatus</i>	T	S	25.8
<i>Ageratum conyzoides</i>	T	O	20.1
<i>Agrimonia eupatoria</i>	T	W	59.6
<i>Agropyron cristatum</i>	T	R	53.4
<i>Agropyron repens</i>	T	S	22.6
<i>Agrostis alba</i>	T	O	25.3
<i>Alchemilla mollis</i>	T	W	88.7
<i>Alchemilla mollis</i>	T	O	42.6
<i>Alchemilla mollis</i>	T	R	70.4
<i>Alchemilla mollis</i>	T	S	31.2
<i>Allium ascalonicum</i>	T	S	42.9
<i>Allium sativum</i>	T	O	100.0
<i>Allium tuberosum</i>	T	O	100.0
<i>Alpinia officinarum</i>	T	O	21.9
<i>Alpinia officinarum</i>	T	S	100.0
<i>Amaranthus candatus</i>	T	S	38.0
<i>Amaranthus gangeticus</i>	T	S	66.8
<i>Ananas comosus</i>	T	O	20.3
<i>Ananas comosus</i>	T	W	23.8
<i>Anethum graveolens</i>	T	O	35.8
<i>angelica archangelica</i>	T	R	53.5
<i>Anthemis nobilis</i>	T	O	45.3



Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Anthemis tinctorium	T	S	47.5
Anthriscus cerefolium	T	O	20.5
Arctium minus	T	O	54.1
Arctostaphylos uva-ursi	T	O	28.1
Arctostaphylos uva-ursi	T	R	100.0
Aronia melanocarpa	T	V	100.0
Aronia melanocarpa	T	W	42.7
Aronia prunifolia	T	W	39.0
Artemisia absinthium	T	O	25.6
Artemisia dracunculifolia	T	O	31.3
Artemisia dracunculifolia	T	S	22.3
Aster	T	S	20.9
Avena sativa	T	S	100.0
Avenha carambola	T	O	25.8
Beta vulgaris	T	R	100.0
Beta vulgaris	T	O	59.3
Beta vulgaris	T	S	41.4
Betula glandulosa	T	S	61.8
Boesenbergia rotunda	T	O	36.9
Boesenbergia rotunda	T	S	42.5
Boletus edulis	T	S	43.1
Borago officinalis	T	S	36.8
Brassica hirta	T	S	30.2
Brassica juncea	T	R	41.4
Brassica Napus	T	S	29.9
Brassica napus	T	R	22.9
Brassica oleracea	T	R	25.6
Brassica oleracea	T	V	27.0
Brassica oleracea	T	R	26.5
Brassica rapa	T	R	24.8
Bromus inermis	T	O	27.8
Canna edulis	T	O	40.8
Capsicum annuum	T	S	22.6
Carex monnifolia	T	O	28.0
Carex monnifolia	T	R	49.8
Carya cordiformis	T	S	28.8
Carya cordiformis	T	O	21.0
Carya cordiformis	T	W	88.7
Clematis amandii	T	O	20.1
Chaerophyllum bulbosum	T	O	22.8
Chaerophyllum bulbosum	T	S	24.3
Agaricus bisporatus	T	S	25.4
Chefidonium majus	T	O	39.0
Chenopodium bonus-henricus	T	S	44.3
chrysanthemum coronarium	T	O	33.4
chrysanthemum coronarium	T	S	23.9
Cichorium endivia subs. Endivia	T	O	44.3

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Cichorium endivia subs. Endivia	T	S	20.5
Cirsium arvense	T	R	49.7
Citrullus colocynthis	T	R	37.0
Citrullus colocynthis	T	S	35.5
Citrus limettoidea	T	O	47.1
Citrus limon	T	S	26.2
Citrus limon	T	O	73.9
Citrus reticulata	T	V	32.7
Citrus reticulata	T	S	29.4
Citrus sinensis	T	V	25.2
Colx Lacryma-Jobi	T	O	32.7
Colx Lacryma-Jobi	T	S	31.4
Corchorus olitorius	T	O	24.4
Cornus canadensis	T	S	41.3
Crataegus sp	T	S	34.0
Crataegus submollis	T	S	39.6
Curcuma longa	T	O	55.3
Curcuma zedoaria	T	O	24.4
Cydonia oblonga	T	V	35.2
Cynara scolymus	T	O	41.2
Cynara scolymus	T	R	38.8
Dactylis Glomerata	T	O	31.9
Datura metel	T	O	38.9
Datura metel	T	S	21.4
Datura stramonium	T	S	25.9
Daucus carota	T	R	92.3
Daucus carota	T	O	31.0
Dipsacus sativus	T	O	100.0
Dirca palustris	T	S	31.4
Dolichos lablab	T	O	23.1
Dryopteris filix-mas	T	R	68.2
Echinacea purpurea	T	S	38.2
Eleusine coracana	T	O	22.1
Elymus junceus	T	R	37.9
Erigeron speciosus	T	O	35.0
Erysimum perofskianum	T	O	22.6
Erysimum perofskianum	T	S	23.2
Fagopyrum esculentum	T	S	24.7
Foeniculum vulgare	T	O	31.4
Foeniculum vulgare	T	V	69.1
Foeniculum vulgare	T	S	38.5
Fragaria x ananassa	T	O	60.4
Fragaria x ananassa	T	V	30.2
Fragaria x ananassa	T	S	28.4
Frangula alnus	T	R	65.3
Frangula alnus	T	S	40.7
Fucus vesiculosus	T	O	42.7

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
<i>Galinsoga ciliata</i>	T	R	49.3
<i>Gaultheria hispidula</i>	T	W	36.9
<i>Gentiana macrophylla</i>	T	S	26.1
<i>Ginkgo biloba</i>	T	V	27.1
<i>Glycyrrhiza glabra</i>	T	W	58.1
<i>Glycyrrhiza glabra</i>	T	S	50.4
<i>Glycyrrhiza glabra</i>	T	R	25.1
<i>Gossypium herbaceum</i>	T	O	22.7
<i>Gossypium herbaceum</i>	T	S	27.3
<i>Guizotia abyssinica</i>	T	S	38.5
<i>Hamamelis virginiana</i>	T	O	37.1
<i>Hamamelis virginiana</i>	T	R	100.0
<i>Hedeoma pulegioides</i>	T	O	28.5
<i>Hedeoma pulegioides</i>	T	S	28.2
<i>Helenium hoopesii</i>	T	O	31.7
<i>Helenium hoopesii</i>	T	S	58.0
<i>Helianthus tuberosus</i>	T	V	23.7
<i>Helichrysum thianschanicum</i>	T	O	38.4
<i>Helichrysum thianschanicum</i>	T	R	27.0
<i>Helleborus niger</i>	T	S	32.1
<i>Hibiscus cannabinus</i>	T	O	39.9
<i>Hibiscus cannabinus</i>	T	S	21.1
<i>Humulus lupulus</i>	T	S	54.8
<i>Humulus lupulus</i>	T	R	50.5
<i>Hydrastis canadensis</i>	T	O	20.9
<i>Hypericum henryi</i>	T	O	32.5
<i>Hypericum perforatum</i>	T	S	27.9
<i>Hypericum sp</i>	T	W	55.9
<i>Hypomyces lactifluorum</i>	T	S	42.7
<i>Iberis amara</i>	T	S	100.0
<i>Inula helenium</i>	T	S	30.1
<i>Ipomoea batatas</i>	T	V	27.4
<i>Ipomoea batatas</i>	T	S	44.9
<i>Juniperus communis</i>	T	S	57.8
<i>Laportea canadensis</i>	T	S	63.5
<i>Laurus nobilis</i>	T	W	73.8
<i>Laurus nobilis</i>	T	S	21.2
<i>Lavandula angustifolia</i>	T	O	22.7
<i>Lavandula angustifolia</i>	T	S	25.1
<i>Lavandula latifolia</i>	T	O	100.0
<i>Lavandula latifolia</i>	T	S	28.5
<i>Lavandula latifolia</i>	T	O	54.3
<i>Ledum groenlandicum</i>	T	O	25.7
<i>Lentinus edodes</i>	T	S	24.3
<i>Leonurus cardiaca</i>	T	R	100.0
<i>Lepidium sativum</i>	T	O	41.2
<i>Levisticum officinale</i>	T	R	100.0
<i>Litchi chinensis</i>	T	S	100.0

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
<i>Lolium multiflorum</i>	T	O	24.0
<i>Lolium perenne</i>	T	O	27.8
<i>Lonicera ramosissima</i>	T	S	20.9
<i>Lupinus polyphyllus</i>	T	O	35.1
<i>Lupinus polyphyllus</i>	T	S	20.5
<i>Luzula sylvatica</i>	T	R	22.6
<i>Majorana hortensis</i>	T	V	20.1
<i>Malus spp.</i>	T	V	37.8
<i>Malus spp.</i>	T	S	45.1
<i>Malus hupehensis</i>	T	S	24.4
<i>Melaleuca alternifolia</i>	T	O	26.7
<i>Melissa officinalis</i>	T	S	20.7
<i>mentha arvensis</i>	T	R	34.0
<i>Mentha piperita</i>	T	S	60.1
<i>Mentha pulegium</i>	T	V	24.6
<i>Mentha pulegium</i>	T	W	24.8
<i>Mentha spicata</i>	T	O	24.4
<i>Mentha suaveolens</i>	T	S	28.9
<i>Monarda didyma</i>	T	O	54.7
<i>Musa paradisiaca</i>	T	O	21.4
<i>Musa paradisiaca</i>	T	W	32.8
<i>nasturtium officinale</i>	T	O	100.0
<i>Nepeta cataria</i>	T	O	60.1
<i>Nepeta cataria</i>	T	S	23.4
<i>Nigella sativa</i>	T	S	23.2
<i>Ocimum Basilicum</i>	T	V	30.7
<i>Ocimum Basilicum</i>	T	W	30.9
<i>Ocimum Basilicum</i>	T	O	39.1
<i>Oenothera biennis</i>	T	S	29.6
<i>Oenothera biennis</i>	T	O	24.2
<i>Oenothera biennis</i>	T	R	58.6
<i>Onobrychis vicifolia</i>	T	O	42.6
<i>Origanum vulgare</i>	T	S	53.8
<i>Oryza sativa</i>	T	S	33.3
<i>Oxalis Deppei</i>	T	O	30.8
<i>Panicum miliaceum</i>	T	S	21.2
<i>Passiflora spp.</i>	T	O	30.2
<i>Passiflora spp.</i>	T	V	59.4
<i>Passiflora spp.</i>	T	S	24.4
<i>Pastinaca sativa</i>	T	S	53.9
<i>Pastinaca sativa</i>	T	R	20.8
<i>Pastinaca sativa</i>	T	O	26.9
<i>Petroselinum crispum</i>	T	R	58.2
<i>Phaseolus coccineus</i>	T	S	27.1
<i>Phaseolus vulgaris</i>	T	W	37.8
<i>Phaseolus vulgaris</i>	T	O	22.2
<i>Phaseolus vulgaris</i>	T	S	23.2

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
<i>Phlox paniculata</i>	T	S	21.3
<i>Physalis pruinosa</i>	T	S	35.2
<i>Phytolacca americana</i>	T	S	100.0
<i>Plantago coronopus</i>	T	O	21.2
<i>Plantago coronopus</i>	T	S	48.2
<i>Pleurotus spp.</i>	T	S	31.6
<i>Poa pratensis</i>	T	O	50.7
<i>Podophyllum peltatum</i>	T	S	27.9
<i>Polygonum chinense</i>	T	S	25.0
<i>Polygonum aviculare</i>	T	O	28.0
<i>Polygonum aviculare</i>	T	R	100.0
<i>Polygonum pennsylvanicum</i>	T	O	42.3
<i>Polygonum persicaria</i>	T	O	28.8
<i>Populus incassata</i>	T	S	100.0
<i>Populus Tremula</i>	T	S	48.5
<i>Populus X petrowskyana</i>	T	S	44.1
<i>Populus X petrowskyana</i>	T	O	100.0
<i>Populus X petrowskyana</i>	T	W	72.0
<i>Portulaca oleracea</i>	T	O	33.7
<i>Poterium sanguisorba</i>	T	W	100.0
<i>Prunus spp.</i>	T	S	39.6
<i>Prunus persica</i>	T	O	21.4
<i>Prunus persica</i>	T	V	28.6
<i>Psidium guajava</i>	T	V	37.7
<i>Psidium spp.</i>	T	S	28.3
<i>Psoralea corylifolia</i>	T	S	61.5
<i>Pteridium aquilinum</i>	T	R	76.2
<i>Pteridium aquilinum</i>	T	S	27.9
<i>Pteridium aquilinum</i>	T	W	66.4
<i>Punica granatum</i>	T	O	83.0
<i>Rehmannia glutinosa</i>	T	R	38.5
<i>Raphanus sativus</i>	T	S	22.4
<i>Raphanus sativus</i>	T	S	23.6
<i>Reseda luteola</i>	T	O	20.3
<i>Reseda odorata</i>	T	O	100.0
<i>Rheum officinale</i>	T	S	33.3
<i>Rheum officinale</i>	T	S	34.0
<i>Rheum X cultorum</i>	T	S	27.5
<i>Ricinus communis</i>	T	W	24.8
<i>Ribes Grossularia</i>	T	W	24.4
<i>Ribes nidigrolaria</i>	T	S	50.1
<i>Ribes nigrum</i>	T	V	23.8
<i>Ribes nigrum</i>	T	W	64.1
<i>Ribes nigrum</i>	T	W	32.4
<i>Ribes Sylvestre</i>	T	W	100.0
<i>Rosa rugosa</i>	T	R	75.8
<i>Rosmarinus officinalis</i>	T	W	46.6

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Rubus idaeus	T	O	27.6
Rubus idaeus	T	S	24.3
Rubus idaeus	T	O	35.5
Rubus occidentalis	T	R	93.2
Rubus occidentalis	T	O	42.1
Rubus occidentalis	T	S	20.5
Rumex acetosella	T	V	44.9
Rumex crispus	T	O	31.3
Rumex crispus	T	R	100.0
Rumex crispus	T	S	20.8
Ruta graveolens	T	O	24.1
Serenoa repens	T	S	28.5
Salvia officinalis	T	R	66.5
Salvia officinalis	T	O	54.0
Salvia officinalis	T	W	47.2
Sambucus canadensis	T	S	23.2
Sambucus canadensis	T	O	35.0
Sambucus canadensis	T	R	32.6
Sambucus canadensis	T	W	54.0
Sanguisorba minor	T	W	50.0
Santolina chamaecyparissus	T	O	75.8
Santolina chamaecyparissus	T	R	33.3
Satureja montana	T	O	100.0
Satureja montana	T	R	66.8
Satureja repandra	T	R	87.4
Schizonepeta tenuifolia	T	O	29.1
Schizonepeta tenuifolia	T	S	21.1
Scorzonera hispanica	T	R	42.3
Scorzonera hispanica	T	S	20.8
Scutellaria lateriflora	T	S	36.6
Serratula tinctoria	T	S	36.3
Slum sisarum	T	O	22.1
Solanum melongena	T	O	22.4
Solidago sp	T	S	22.6
Sonchus oleraceus	T	R	41.8
Sorghum caffrorum	T	O	23.0
Sorghum dochna	T	O	30.3
Sorghum dochna	T	O	53.5
Sorghum dura	T	V	21.6
Sorghum sudanense	T	V	23.7
Stachys byzantina	T	O	25.3
Stellaria graminea	T	O	27.6
Stellaria graminea	T	S	36.7
Stellaria media	T	O	22.6
Stipa capillata	T	O	36.7
Symphytum officinale	T	O	20.6
Symphytum officinale	T	V	25.0

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Tanacetum cinerariifolium	T	R	24.9
Tanacetum vulgare	T	O	46.4
Tanacetum vulgare	T	S	32.0
Taraxacum officinale	T	O	63.1
Thlaspi arvense	T	O	32.5
Thymus fragrantissimus	T	R	36.7
Thymus fragrantissimus	T	O	100.0
Thymus praecox subsp arcticus	T	O	38.7
Thymus pseudolanuginosus	T	R	21.5
Thymus vulgaris	T	W	20.0
Triticosecale spp.	T	O	26.0
Triticum aestivum	T	O	20.9
Triticum turgidum	T	O	49.4
Triticum spelta	T	O	35.0
Tropaeolum majus	T	S	23.5
Tsuga diversifolia	T	S	34.3
Tsuga mertensiana	T	S	32.8
Typha latifolia	T	S	36.1
Urtica dioica	T	O	32.8
Vaccinium angustifolium	T	S	33.7
Vaccinium macrocarpon	T	V	24.1
Vaccinium macrocarpon	T	W	30.3
Vaccinium macrocarpon	T	S	70.9
Vaccinium macrocarpon	T	O	57.2
Vaccinium macrocarpon	T	O	26.0
Valeriana officinalis	T	O	53.7
Valerianella locusta	T	O	22.8
Verbascum thapsus	T	S	25.2
Verbascum thapsus	T	O	29.9
Veronica officinalis	T	S	39.1
Vitis	T	O	40.0
Vitis	T	W	23.5
Vitis	T	S	26.4
Vitis	T	S	20.1
Weigela coraeensis	T	S	25.3
Weigela hortensis	T	O	28.4
Xanthium sibiricum	T	S	38.4
Zea mays			
Achillea ptarmica	A	O	54.3
Achillea ptarmica	G	O	64.3
Geranium pratense	T	R	93.4
Geranium pratense	A	R	98.5
Geranium pratense	G	R	97.4
Geranium pratense	T	O	53.6
Thalictrum aquilegifolium	G	O	60.4
Thalictrum aquilegifolium	T	O	55.9
Veronica spicata			

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Veronica spicata	A	O	59.2
Veronica spicata	G	O	58.2
Helenium spp.	T	O	55.7
Salvia sylvestris	T	O	77.4
Salvia sylvestris	A	O	68.9
Salvia sylvestris	G	O	55.0
Salvia regeana	T	O	62.6
Crambe cordifolia	G	R	58.3
Crambe cordifolia	G	O	58.7
Rudbeckia maxima	G	O	68.4
Trollius x cultorum	T	R	97.6
Trollius x cultorum	A	R	93.2
Trollius x cultorum	G	R	100.1
Amsonia tabernaemontana	A	R	53.2
Oenothera fruticosa spp.	T	R	109.8
Oenothera fruticosa spp.	T	O	61.3
Oenothera fruticosa spp.	A	R	97.5
Oenothera fruticosa spp.	G	R	105.9
Veronica austriaca ssp teucrium	T	O	68.6
Veronica austriaca ssp teucrium	G	O	58.1
Coreopsis verticillata	T	R	55.6
Coreopsis verticillata	G	O	70.4
Potentilla fruticosa	T	R	104.8
Potentilla fruticosa	A	R	99.4
Lysimachia clethroides	G	O	67.8
Magnolia x loebneri	T	R	61.4
Iberis sempervirens	T	O	62.4
Iberis sempervirens	G	O	63.8
Filipendula vulgaris	T	R	98.3
Filipendula vulgaris	A	R	94.5
Filipendula vulgaris	G	R	96.3
Geranium sanguineum	T	R	89.4
Geranium sanguineum	T	O	63.3
Geranium sanguineum	A	R	82.6
Geranium sanguineum	A	O	53.2
Geranium sanguineum	G	R	88.8
Geranium sanguineum	G	O	57.7
Philadelphus coronarius	A	O	55.5
paeonia suffruticosa	T	R	58.9
paeonia suffruticosa	T	O	52.1
Paeonia suffruticosa	A	R	73.8
Paeonia suffruticosa	A	O	52.2
Paeonia suffruticosa	G	R	58.7
Paeonia suffruticosa	G	O	50.4
Dahlia spp.	T	R	77.4
Begonia convolvulacea	T	O	69.8
Begonia convolvulacea	A	O	67.5
Begonia convolvulacea	G	O	72.6



Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Begonia emini	T	O	72.8
Begonia emini	A	O	77.2
Begonia emini	G	O	75.4
Begonia glabra	T	O	82.3
Begonia mannii	A	O	82.5
Begonia mannii	G	O	72.8
Begonia polygonoides	T	O	79.0
Begonia polygonoides	A	O	74.8
Begonia polygonoides	G	O	73.2
Fushia spp.	T	R	76.6
Fushia spp.	A	R	70.7
Fushia spp.	G	R	78.9
Butomus umbellatus	A	O	58.8
Onoclea sensibilis	G	O	54.7
Onoclea sensibilis	G	R	50.1
Pinus cembra	A	R	83.2
Pinus cembra	G	R	78.3
Cornus sericea	T	R	104.0
Cornus sericea	A	O	53.4
Cornus sericea	A	R	91.8
Cornus sericea	G	O	51.0
Cornus sericea	G	R	98.5
Hydrangea quercifolia	T	R	58.1
Solidago caesia	T	R	60.7
Solidago caesia	A	R	60.5
Cornus alba	T	R	98.9
Cornus alba	A	R	106.7
Cornus alba	G	R	85.3
Carpinus caroliniana	T	R	95.4
Carpinus caroliniana	A	R	86.2
Carpinus caroliniana	G	R	94.5
Astilbe chinensis	T	R	54.3
Astilbe chinensis	G	R	50.3
Symphoricarpos albus	G	R	52.0
Euphorbia amygdaloides	T	R	103.8
Euphorbia amygdaloides	A	R	75.2
Euphorbia amygdaloides	G	R	71.3
Viburnum plicatum	A	R	61.0
Rubus arcticus	T	R	89.3
Rubus arcticus	A	R	85.5
Rubus Phoenicolasius	G	R	93.2
ribes americanum	T	R	70.4
Passiflora spp.	T	O	62.4
Rubus occidentalis	T	R	70.9
Nicotiana tabacum	G	O	60.9
Beta vulgaris	T	O	71.3
Oenothera biennis	A	R	80.3
Alchemilla mollis	T	R	96.0
Alchemilla mollis	A	R	87.2
Symphytum officinale	A	O	80.2

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Fragaria ananassa	A	R	97.9
Fragaria ananassa	G	R	93.8
Vaccinium corymbosum	G	R	58.6
Vaccinium angustifolium	A	R	71.8
Vaccinium angustifolium	G	R	53.6
Vitis	A	R	62.5
Vitis	G	R	79.4
Petasites japonicus	A	R	56.5
Petasites japonicus	G	R	53.0
Nicotiana rustica	G	O	61.1
Pysalis hircarpa	A	R	53.8
Pteridium aquilinum	T	O	69.2
Pteridium aquilinum	A	R	66.2
Pteridium aquilinum	G	R	66.3
Pteridium aquilinum	G	O	56.2
Matteuccia pensylvanica	T	R	67.2
Matteuccia pensylvanica	A	R	59.0
Ocimum tenuiflorum	T	O	54.8
Carthamus tinctorius	A	R	50.9
Carthamus tinctorius	G	R	69.0
Ligustrum vulgare	T	O	87.0
Ligustrum vulgare	A	O	76.2
Ligustrum vulgare	G	O	85.7
Malva verticillata	T	R	80.1
Malva verticillata	A	R	82.9
Malva verticillata	G	R	82.4
Hamamelis virginiana	T	R	56.1
Arctostaphylos uva-ursi	T	R	74.8
Arctostaphylos uva-ursi	G	R	88.0
Vicia faba	T	O	84.6
Sempervivum tectorum	T	O	57.3
Sempervivum tectorum	A	O	74.8
Sempervivum tectorum	G	O	52.3
Ajuga reptans	T	O	55.3
Ajuga reptans	A	O	52.3
Ajuga reptans	G	O	72.1
Phlox paniculata	T	O	66.2
Ligularia dentata	A	O	52.1
Ligularia dentata	G	R	50.8
Ligularia dentata	G	O	52.6
Achillea ptarmica	T	O	50.9
Potentilla fruticosa	G	R	98.6
Vernonia gigantea	A	R	50.4
Vernonia gigantea	A	O	62.3
Vernonia gigantea	G	R	51.2
Vernonia gigantea	G	O	50.7
Penstemon digitalis	T	R	64.5
Penstemon digitalis	A	R	63.5
Penstemon digitalis	A	O	57.3
Penstemon digitalis	G	R	63.4

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
<i>Penstemon digitalis</i>	G	O	67.8
<i>Malus</i> spp.	T	R	56.1
<i>Malus</i> spp.	T	O	56.7
<i>Malus</i> spp.	A	R	50.8
<i>Malus</i> spp.	G	R	51.2
<i>Hosta sieboldiana</i>	G	O	50.9
<i>Hamamelis mollis</i>	T	R	99.1
<i>Hamamelis mollis</i>	A	R	94.1
<i>Hamamelis mollis</i>	G	R	89.4
<i>Chaenomeles x superba</i>	T	R	56.2
<i>Chaenomeles x superba</i>	A	R	71.9
<i>Chaenomeles x superba</i>	G	R	68.6
<i>Chaenomeles x superba</i>	G	O	52.0
<i>Centaurea dealbata</i>	T	R	50.9
<i>Centaurea dealbata</i>	A	R	74.1
<i>Paeonia</i> spp.	T	R	79.8
<i>Paeonia</i> spp.	T	O	58.6
<i>Paeonia</i> spp.	A	R	79.6
<i>Paeonia</i> spp.	A	O	58.5
<i>Paeonia</i> spp.	G	R	82.0
<i>Paeonia</i> spp.	G	O	60.0
<i>Lysimachia clethroides</i>	T	R	83.3
<i>Lysimachia clethroides</i>	T	O	64.3
<i>Lysimachia clethroides</i>	G	R	85.8
<i>Viburnum plicatum</i>	G	R	57.9
<i>Buxus microphylla</i>	T	R	58.0
<i>Astilboides tabularis</i>	T	R	104.2
<i>Astilboides tabularis</i>	A	R	108.1
<i>Astilboides tabularis</i>	G	R	100.3
<i>Staphylea trifolia</i>	A	R	63.6
<i>Bergenia x schmidtii</i>	T	R	100.5
<i>Bergenia x schmidtii</i>	A	R	113.7
<i>Bergenia x schmidtii</i>	G	R	99.3
<i>Rodgersia podophylla</i>	T	R	68.9
<i>Rodgersia podophylla</i>	A	R	59.4
<i>Rodgersia podophylla</i>	G	R	56.5
<i>Geranium phaeum</i>	T	R	92.7
<i>Geranium phaeum</i>	A	R	84.3
<i>Geranium phaeum</i>	G	R	101.0
<i>Rubus pubescens</i>	T	R	71.5
<i>Rubus pubescens</i>	A	R	78.2
<i>Rubus pubescens</i>	G	R	82.8
<i>Taxus x media</i>	T	R	60.1
<i>Taxus x media</i>	A	R	61.6
<i>Taxus x media</i>	G	R	52.3
<i>Geranium x cantabrigiense</i>	T	R	106.1
<i>Geranium x cantabrigiense</i>	A	R	94.2
<i>Geranium x cantabrigiense</i>	G	R	95.9
<i>Fuchsia magellanica</i>	T	R	100.2
<i>Fuchsia magellanica</i>	A	R	91.9

Table 10  
HLE

Nom latin	Stress	Extrait	Inhibition (%)
Fuchsia magellanica	G	R	102.2
Microbiata decussata	A	R	51.5
Microbiata decussata	G	R	51.9
Rhododendron spp.	G	R	51.2
Stephanandra incisa	T	R	102.5
Stephanandra incisa	A	R	104.6
Stephanandra incisa	G	R	99.1
Corylus maxima	A	R	50.8
Corylus maxima	G	R	57.1
Cyperus alternifolius	G	R	56.2
Soleirolia soleirolia	A	R	51.2
Soleirolia soleirolia	G	R	68.0
Strelitzia reginae	T	R	106.6
Strelitzia reginae	A	R	94.3
Strelitzia reginae	G	R	111.7
Hedychium coronarium	T	R	53.5
Hedychium coronarium	A	R	86.9
Hedychium coronarium	G	R	74.6
Strelitzia reginae	T	R	78.6
Strelitzia reginae	A	R	78.0
Strelitzia reginae	G	R	107.3
Symphoricarpos orbiculatus	G	R	58.7
Rodgersia spp.	A	R	59.5
Rodgersia spp.	G	R	59.0
Lamium galeobdolon	T	R	91.5
Astilbe x arendsii	A	R	84.5
Clamatis alpina	A	R	54.4
Stewartia pseudocamellia	T	R	75.5
Stewartia pseudocamellia	A	R	84.1
Stewartia pseudocamellia	G	R	81.3
Pinus mugo	T	R	58.9
Pinus mugo	A	R	53.7
Pinus mugo	G	R	61.7
Rubus thibetanus	T	R	97.6
Rubus thibetanus	A	R	97.9
Rubus thibetanus	G	R	95.4

Table 11  
Clostripain

Nom latin	Stress	Extrait	Inhibition (%)
Achidinia arguta	A	R	34.1
Anthoxanthum odoratum	A	R	35.0
Apocynum cannabinum	A	R	47.6
Arctium minus (Hill) Bernhardt	A	R	34.5
Beckmannia erucaeformis	A	O	47.3
Beta vulgaris	A	O	37.2
Brassica rapa	A	O	24.6
Buddleja davidii	A	R	27.6
Bupleurum falcatum	A	O	34.6
Capsicum annuum	A	S	36.8
Capsicum annuum	A	R	24.9
Colinus coggygria	A	R	21.0
Kolkwitzia amabilis	A	R	27.9
Laserpitium latifolium	A	R	20.4
Lindera benzoin	A	R	38.6
Lolium perenne	A	S	34.7
Miscanthus sacchariflorus	A	O	39.9
Ophiopogon japonicus	A	R	20.5
Phaseolus mungo	A	S	30.0
Phaseolus Vulgaris	A	O	36.4
Phaseolus Vulgaris	A	R	23.4
Plumbago zeylanica	A	O	26.5
Portulaca oleracea	A	O	22.2
Saxif purpurea F. Gracilis	A	R	38.6
Solanum melanocerasum	A	S	26.0
Stellaria media (Linné) Cyrillo	A	O	31.6
Tanacetum vulgare	A	S	35.3
Tanacetum vulgare	A	O	35.4
Tritolium incarnatum	A	S	22.0
Vaccinium angustifolium	A	O	34.0
Zea Mays	A	O	21.9
Aframomum melegueta	G	O	27.9
Allium sativum	G	O	35.3
Anthemis nobilis	G	O	35.8
Anthurium guilingii	G	O	55.2
Astilbe x arendsii	G	R	25.6
Beta vulgaris	G	R	28.0
Campanula rapunculus	G	S	24.5
Cirsium arvense	G	R	30.0
Cissus discolor	G	O	40.8
Coccoloba caracasana	G	R	24.9
Convallaria majalis	G	R	28.5
Cucurbita pepo	G	O	20.9
Cucurbita pepo	G	S	42.5
Ernhenatherum elatius	G	S	21.6
Filipendula rubra	G	R	44.3
Galium odoratum	G	O	31.2

Table 11  
Clostripain

Nom latin	Stress	Extrait	Inhibition (%)
Glycyrrhiza glabra	G	O	27.6
Hedychium sp.	G	O	35.6
Houttuynia cordata	G	O	30.2
Lactuca sativa	G	O	28.8
Lactuca sativa	G	O	21.6
Lotus tetragonolobus	G	S	42.9
Lycopersicon esculentum	G	R	32.3
Lysimachia clethroides	G	R	22.7
Magnolia stellata	G	R	23.6
Microlepis platyphylla	G	O	21.0
Miscanthus sacchariflorus	G	R	25.6
Myrica pensylvanica	G	O	22.7
N	G	O	24.4
Nicotiana tabacum	G	R	22.8
Paeonia	G	R	31.3
Pastinaca sativa	G	R	29.2
pastinaca sativa	G	S	44.7
Phaseolus vulgaris	G	O	38.7
Pteridium aquilinum	G	O	22.2
Solidago sp ?	G	S	40.8
Symphytum officinale	G	S	22.7
Tanacetum vulgare	G	S	31.4
Thymus fragrantissimus	G	O	20.1
Urtica dioica	G	O	32.6
Zea mays	G	O	22.4
Abies balsamea	T	O	38.6
Allium ampeloprasum	T	S	30.3
Allium sativum	T	O	55.5
Amaranthus gangeticus	T	R	75.4
Apium graveolens	T	R	21.7
Aralia cordata	T	S	48.2
Asclepias tuberosa	T	O	20.2
Asclitidia chinensis	T	O	47.7
Baptisia tinctoria	T	O	50.4
Betula alleghaniensis	T	R	24.9
Brassica oleracea	T	R	21.4
Brassica rapa	T	R	30.5
Caladium sp.	T	O	39.8
Carica papaya	T	R	23.8
Chaerophyllum bulbosum	T	R	24.3
Chrysanthemum coronarium	T	O	32.7
Clematis chiisanensis	T	R	21.6
Coccoloba caracasana	T	O	40.1
Cocos nucifera	T	R	22.5
Cornus mas	T	R	34.2
Cucurbita pepo	T	S	24.9
Cymbopogon citratus	T	O	20.4
Forsythia x intermedia	T	S	44.0
Heliotropium arborescens	T	O	27.1

Table 11  
Clostripain

Nom latin	Stress	Extrait	Inhibition (%)
<i>Lonicera ramosissima</i>	T	O	34.9
<i>Malus prunifolia</i>	T	R	23.6
<i>Marrubium vulgare</i>	T	R	49.3
<i>Miscanthus sinensis</i> Anchess	T	R	26.9
<i>Nephelium longana</i> ou <i>Euphoria longana</i>	T	O	42.6
<i>Psoralea corylifolia</i>	T	S	54.0
<i>Raphanus sativus</i>	T	O	21.4
<i>Ribes Nigrum</i>	T	R	40.9
<i>Rubus thibetanus</i>	T	R	24.2
<i>Rumex acetosella</i> Linné	T	O	35.2
<i>Sechium edule</i>	T	R	25.6
<i>Stachys macrantha</i>	T	O	25.9
<i>Tepary</i>	T	R	34.9
<i>Thymus vulgaris</i> "Argenteus"	T	O	25.3
<i>Trifolium pratense</i>	T	R	31.3
<i>Trollius x cultorum</i>	T	R	26.5
<i>Uvularia perfoliata</i>	T	R	38.3
<i>Vaccinium macrocarpon</i>	T	O	39.2
<i>Verbena officinalis</i>	T	R	46.2
<i>Zea mays</i>	T	R	32.5

Table 12  
Subtilisin

Nom latin	Stress	Extrait	Inhibition (%)
Actaea racemosa	A	O	20.6
Alchemilla mollis	A	S	23.5
Borago officinalis	A	S	20.5
Capsicum annuum	A	S	24.7
Cornus canadensis L.	A	S	22.6
Genista multibracteata	A	R	21.3
Glycine max	A	S	26.0
Lolium perenne	A	S	75.9
Matricaria recutita	A	S	23.2
Phaseolus Vulgaris	A	O	34.7
Prunus Tomentosa	A	R	20.4
Scutellaria lateriflora	A	O	33.5
Solidago canadensis	A	O	42.0
Spinacia oleracea	A	S	100.0
Tanacetum vulgare	A	S	42.4
Tanacetum vulgare	A	O	26.7
Typha latifolia L.	A	O	24.9
Zea mays	A	S	20.9
Zea Mays	A	O	34.7
Adiantum pedatum	G	S	22.4
Cichorium endivia	G	O	28.7
Cucurbita pepo	G	O	20.8
Echinacea purpurea	G	O	27.6
Lactuca sativa	G	O	36.4
pastinaca sativa	G	S	52.1
Pastinaca sativa	G	S	20.1
Ribes nigrum	G	O	41.2
Symphytum officinale	G	O	30.0
Urtica dioica	G	O	38.2
Vitis sp.	G	S	22.3
Alchemilla mollis	T	S	22.6
Althaea officinalis	T	O	33.5
Althaea officinalis	T	S	53.5
Aralia cordata	T	S	21.0
Ascleridia chinensis	T	O	38.6
Astilboides tabularis	T	O	41.0
Averrhoa carambola	T	S	20.9
Baptisia tinctoria	T	O	25.5
Beta vulgaris	T	S	24.2
Convallaria majalis	T	O	48.2
Datura stramonium	T	O	27.3
Dioscorea batatas	T	S	36.4
Eleusine coracana	T	S	26.2
Fragaria x ananassa	T	O	39.5
Ginkgo biloba	T	O	98.8
Heliotropium arborescens	T	O	35.2
Hibiscus cannabinus	T	S	25.2
Hypericum perforatum	T	O	30.3
Ipomea batatas	T	S	22.1
Lathyrus sylvestris	T	S	21.8



Table 12  
Subtilisin

Nom latin	Stress	Extrait	Inhibition (%)
Lonicera ramosissima	T	O	29.6
Lonicera ramosissima	T	S	39.9
Lonicera syringantha	T	R	31.1
Madia sativa	T	O	27.5
Monarda	T	O	28.2
Ocimum Basilicum	T	S	27.2
Peucedanum oreaselinum	T	S	29.2
Psoralea corylifolia	T	S	20.9
Rahmnus frangula	T	O	26.4
Raphanus sativus	T	S	25.5
Rheum rhabarbarum	T	S	21.6
Ribes Nigrum	T	R	28.9
Rubus occidentalis	T	S	22.8
Rumex scutatus	T	S	21.4
Solidago Hybrida	T	O	34.5
Tanacetum balsamila	T	O	33.9
Vaccinum macrocarpon	T	O	81.2
Xanthium sibiricum	T	S	31.7
Zea mays	T	S	28.3

A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																									
																															Nom latin	Nom commun	Organe	Type d'Extrait	No	Enzyme inhibée				Tests cellulaires				Cytotoxité (% sur des cellules)											
																																				Invasion	% inhibition	CMA	% inhibition	Angiogenèse	CFA	% inhibition	EBP	% inhibition	Caco-2	HepG2	U937	MRC5	HUVEC	Commentaires					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																									
1																																																							
2																																																							
3																																																							
4																																																							
5	Koelia scoparia	T. l. h. l.	A	418	R	A	24	29	31	30																																													
6	Thymus praecox subsp. Arelatus	A. l.	A	431	O	A	38	43	28	45																																													
7	Teucrium chamaedrys	A. l. l.	A	474	R	A	0	0	0	0																																													
8	Salvia officinalis	G. l. l.	A	1078	R	A	0	17	25	28																																													
9	Fagopyrum esculentum	G. l.	R	1237	R	A	0	14	40	30																																													
10	Agrostis alba	A. l.	A	1500	O	A	38	47	9	18																																													
11	Vitis sp.	A. l.	A	1617	O	A	0	0	0	0																																													
12	Solanum melongena	T. l.	A	1753	O	A	NA	34	25	37																																													
13	Hamamelis virginiana	A. l. l.	A	2712	R	A	0	0	0	0																																													
14	Teucrium canadense	T. l.	A	5448	O	A	TX	TX	63	38																																													
15	Hardium vulgare subsp. Vulgare	G. l.	A	5818	O	A	0	0	0	0																																													
16	Borago officinalis	T. l.	A	6010	O	A	0	0	0	0																																													
17	Chenopodium bulbosum	T. l. h.	R	6063	R	A	0	17	25	24																																													
18	Capitulum annuus	G. l.	A	6158	O	A	ND	ND	ND	ND																																													
19	Brassica chrysocarpa	G. l.	A	6278	O	A	38	22	22	24																																													
20	Organum vulgare	G. l. l.	A	6672	O	A	ND	50	42	54																																													
21	Thymus fragrantissimus	T. l. l.	A	153	R	B	90	100	95	74																																													
22	Thymus pseudocaryophyllus	T. l. l.	A	167	R	B	95	35	72	100																																													
23	Sambucus canadensis L.	T. l. h.	A	218	O	B	100	100	88	78																																													
24	Ficus nigra L.	A. l.	A	232	O	B	34	0	0	0																																													
25	Aloe vera	G. l.	A	316	R	B	50	89	17	0																																													
26	Panax quinquefolius	T. l.	A	318	R	B	0	0	0	17																																													
27	Scopolia	G. l.	A	337	R	B	64	69	59	85																																													
28	Quercus agrifolia	T. l. h. l.	A	338	R	B	0	1	12	12																																													
29	Stellaria media	T. l. h. l.	A	390	R	B	0	0	21	8																																													
30	Stellaria media	G. l. l.	A	392	R	B	91	81	82	85																																													
31	Cerastium tomentosum	G. l. l.	A	411	O	B	100	96	25	0																																													

1	2	3	4	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB												
																																Enzyme inhibitory											
																																Type of Enzyme											
																																Organ											
																																Stress											
Non common																																											
32	Saponaria officinalis L.	G	11		413	R	B	60	0	0	0	0	0	60	15	B	0																										
33	Mentha x piperita	T	1,1,1		1038	R	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
34	Allium sativum		A		1089	R	B	NC	NC	NC	0	0	0	0	16	27	26	34	?																								
35	Allium cepa		I		1097	R	B	NC	NC	NC	0	0	0	0	19	29	25	38	?																								
36	Tropaeolum majus	G	I		1114	R	B	39	0	40	60	0	0	0	0	57	59	49	42	23	11	18	100	100	100	100	100	100	100	100	100	100											
37																																											

A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
Nom latin		Nom commun		Stress		Organe		No		Type d'Extrait		Enzyme Inhibée		Invasion % Inhibition		Angiogenèse CMA % Inhibition		ERP % Inhibition 6 hrs 24 hrs		Cytotoxicité (% survie cellulaire) HepG2 Hep3Z L929 MRC5 HUVEC Commentaire									
38																													
39																													
40																													
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51																													
52																													
53																													
54	ND	NON DISPONIBLE																											
55	TX	CONCENTRATION TOXIQUE																											
56	NA	QUANTITÉ INSUFFISANTE																											
57	PF	PAS FAIT																											
58	RC	NON COMPLAINT (100 Nm mm2)																											
59	VC	Voir commentaire																											
60	ER	expérience ratée																											
61	AP	à faire																											
62																													
63																													
64	CMA	cellular migration assay																											
65	CEA	cond formation assay																											
66	ERP	efficacité peau																											
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**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE  
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. An extract from a plant, which demonstrates the ability to modulate cellular activity, wherein the extract has been prepared by the steps of harvesting plant material, treating plant material with a solvent, separating the resulting extract from the solid material, testing an aliquot of the extract against a panel of extracellular proteases, and retaining the extract if it inhibits the activity of one or more extracellular proteases.
2. A library of extracts from plants wherein each extract demonstrates the ability to modulate cellular activity.
3. A library of plant extracts formed by a process comprising:
  - (a) contacting plant material with either an aqueous, ethanolic, or an organic solvent;
  - (b) isolating an extract from said plant material;
  - (c) analysing said extract for the ability to modulate cellular activity;
  - (d) and collected two or more extracts together, so as to form a library of plant extracts wherein each extract inhibits one or more extracellular proteases.
4. An extract from a plant, which demonstrates the ability to modulate cellular activity, wherein said plant has been stressed prior to generating the extract.
5. A library of extracts derived from plants wherein each extract, which demonstrates the ability to modulate cellular activity and wherein said plants have been stressed prior to generating the extract.
6. An extracellular protease inhibitor derived from a plant comprising the steps of:
  - (a) contacting plant material with either an aqueous, ethanolic, or an organic solvent;
  - (b) isolating an extract from said plant material;
  - (c) analysing said extract for the ability to modulate cellular activity

(d) further purifying a compound from said extract if said extract demonstrates the inhibition of one or more extracellular proteases greater than about 20%.

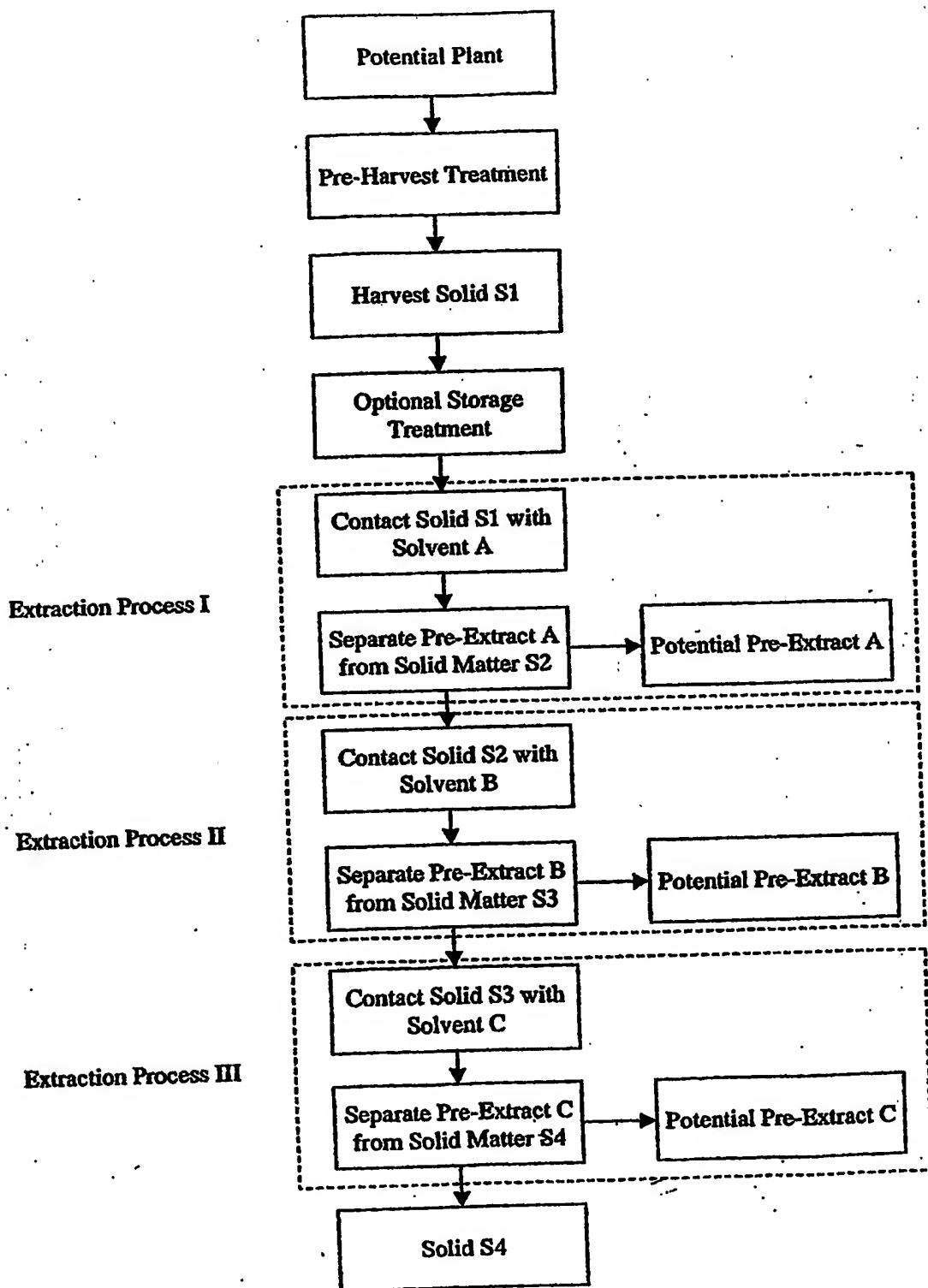


FIGURE 1

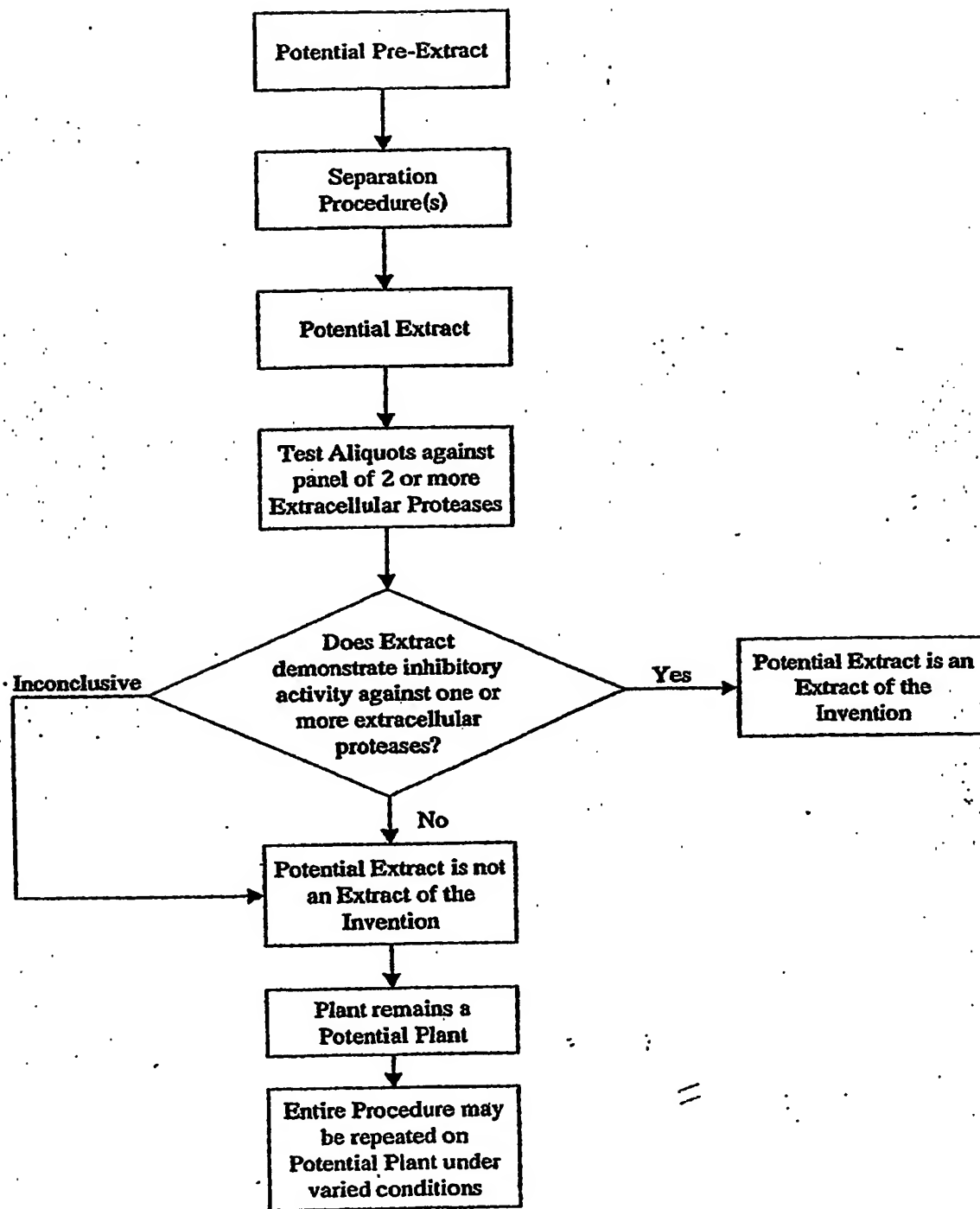


FIGURE 2



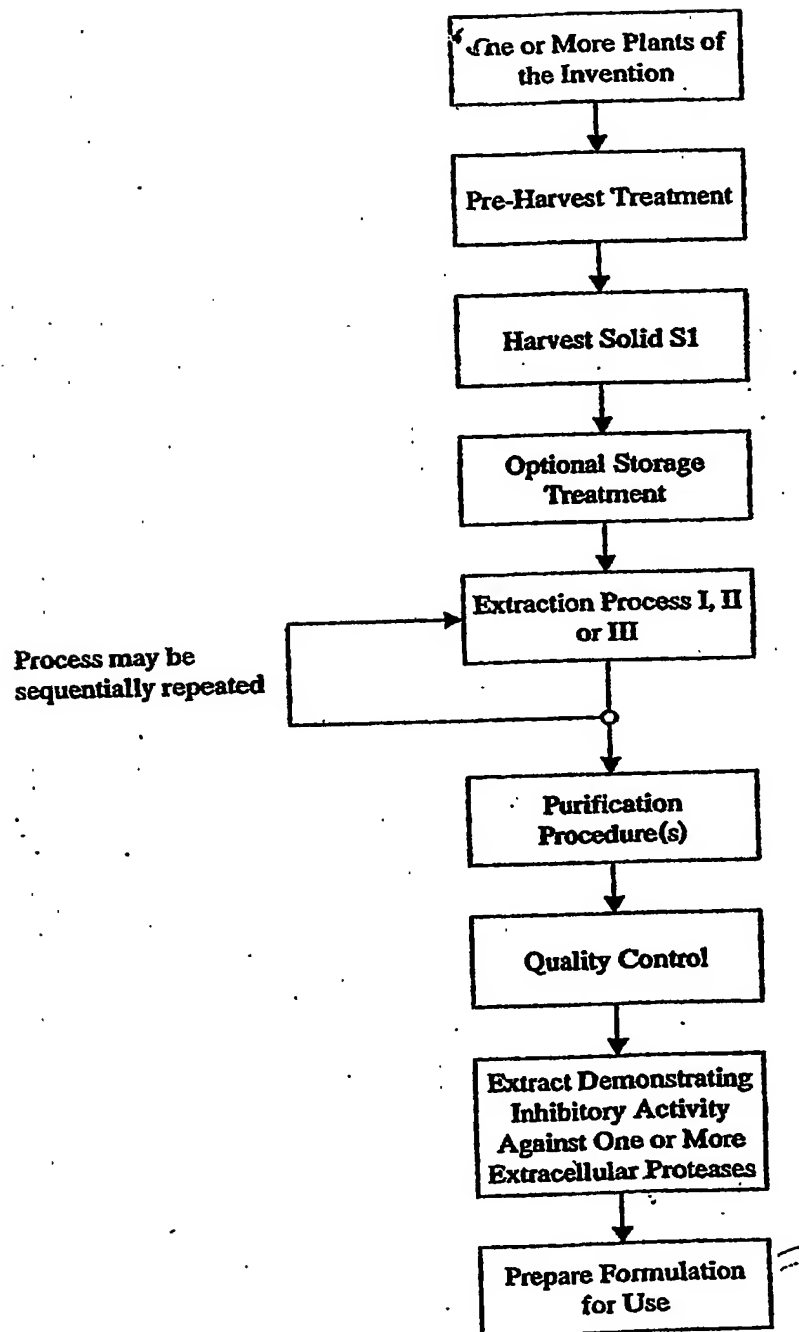


FIGURE 3

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